



# Kremlin 'concern' over Chechen deal

By John Thornhill in Moscow

Efforts to reach a political settlement to the Chechen conflict met another stumbling block yesterday when a meeting of senior Russian officials concluded that "serious adjustments" would have to be made to peace proposals put forward by Mr Alexander Lebed, national security adviser.

By Mr Victor Chernomyrdin, the prime minister, and it was not clear what particular proposals lay at the root of the disagreement. Russian news agencies simply reported: "Alexander Lebed's plan of action... in Chechnya needs a lot of work."

Mr Lebed, who attended the meeting, said he would travel to Chechnya today to hold further talks with the separatist Chechen leadership. He said he remained hopeful of agreeing the principles of a political deal.

Mr Chernomyrdin to chair a meeting to discuss the basis of the peace plan. The most likely cause of friction appears to be the constitutional status of Chechnya. Mr Yeltsin has repeatedly stressed he will not countenance Chechnya leaving the Russian Federation despite the rebels' demands for full independence.

Mr Chernomyrdin, who has so far refused to meet Mr Lebed to discuss the Chechen situation, asked parliament, also attended yesterday's meeting, suggesting constitutional issues had been on the agenda. Mr Lebed has tried to fudge the precise status of Chechnya by suggesting a five-year delay in settling the issue.

General Anatoly Kulikov, the interior minister whom Mr Lebed has denounced as incompetent, was also invited to attend Mr Chernomyrdin's meeting and is unlikely to have missed the chance to counter-attack the security adviser.

## Chrystia Freeland on gubernatorial and mayoral elections spanning 52 regions

After 70 years of dictatorship, Russia has thrown itself into democratic voting with a convert's frenzied enthusiasm. Following tempestuous parliamentary elections in December and an even more grueling fight for the presidency this year, Russia is now at the starting line of yet another political marathon.

# Russians line up again for political marathon

1917," says Mr Vladimir Mau, one of Russia's leading democratic strategists. He, like many observers, believes the regional voting will give Russian one last chance to choose between communism and democracy.

Throwing the power of the state, especially a stranglehold on the media and control over local purse-strings, against the Communists, who have a strong regional network but little money.

For a role in the regional power structure. In others, the president's men have all but conceded victory to the left, but are asking for a pledge of fealty to the president at decisive political moments.

if they cannot beat the current rulers, they might as well join them. It is a proposal Kremlin officials appear ready to accept. Mr Sergei Samoylov, head of territorial administration at the president's office, admits Yeltsin staffers have met the Communist leadership in Moscow in an effort to put together local deals.

# Romania backs away from forex controls

By Virginia Marsh

In an apparent attempt to restore the credibility of its commitment to market-led reform, Romania has backed off from stringent foreign exchange controls that bankers had interpreted as requiring some companies to surrender export earnings.

The central bank now maintains the measures were misinterpreted. It said it had decided to set norms for the energy fund only using "market mechanisms" and only companies exporting subsidised products would have to surrender export earnings.

Bankers had also doubted the measures would work and said the hard currency shortages were a consequence of the government's decision to maintain the leu at an artificially high rate in an election year.

# German concessions on monetary stability pact

By Samuel Brittan in Alpbach, Austria

Germany yesterday conceded that its proposed stability pact to secure budget deficits in the planned European monetary union could be relaxed for countries suffering exceptional economic hardship or natural disaster.

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prepared for exceptions to the 3 per cent rule in cases of severe natural disaster, such as earthquakes.

# French farmers' anger flares

By [Name] in Paris

French farmers staged a surprise protest yesterday, blocking main roads and motorway toll gates overnight. Reuter reports from Paris. They had threatened an "incendiary" end to the summer holidays but such was the secrecy with which the FNSEA farmers' union mobilised demonstrators by mobile telephone and fax that the first sign of the protest was when 15,000 farmers built barriers and started spot checks on trucks.

The protest - over falling beef prices because of the "mad cow" crisis - focused on trucks carrying imports from Britain or from outside the EU, especially cheap imports from eastern Europe which breeders say have helped force beef prices

down by a third in recent months. The union said virtually all blockades had been dismantled by mid-morning. "There will be more union operations in the next few days if calls for help are not heard," said a union statement which demanded compensation and reform of the beef market.

## EUROPEAN NEWS DIGEST

# Iran angered by Berlin trial

Terrorism charges raised against Iranian leaders during a trial in Berlin could hurt German interests in Iran, the country's security chief warned yesterday. Germany is Tehran's main trading partner, but there has been tension over German officials allowing exiled former president Mr Abolhassan Bani-sadr to testify at a trial over the 1982 killing of three Iranian Kurdish rebel leaders and their translator in a Berlin restaurant.

## Airliner crashes in Arctic

All 141 passengers and crew members aboard a Russian Tupolev 154 aircraft were feared dead yesterday after it crashed into a mountain as it approached the airport on the Arctic island of Spitzbergen. Most of the victims were coal miners and their families returning from holiday. If all 141 are confirmed dead, the accident will be the worst involving a Russian aircraft this year.

## Bonn makes reform ground

Chancellor Helmut Kohl's government yesterday pushed its package of spending cuts and welfare reforms a step closer to becoming law by securing the backing of the Bundestag, the lower house of the German parliament, for the measures.

## US envoy warns Serb leaders

A senior US envoy yesterday warned Serb leaders that Bosnia's first peacetime elections should bring a unified country and not partition. The warning coincided with increasing unrest in Bosnia in the run-up to internationally organised elections on September 14.

## EBRD first-half profits rise

The European Bank for Reconstruction and Development's operating profits for the first half of 1996 rose to Ecu45m (\$66.7m) from Ecu20.2m in the same period last year, on a 30 per cent rise in the value of signed projects to Ecu774m against Ecu623m a year earlier.



A French cattle breeder makes his protest outside the Chateau de Versailles yesterday.

# Parting of Nordic neighbours' ways over Emu

Sweden and Finland, the neutral Nordic neighbours which two years ago marched in close step into the European Union, have suddenly taken divergent paths towards the planned European monetary union.

ment, a Social Democratic-led coalition, is adamant that Finland should be among the founding Emu members, maintaining that joining Emu at the start is vital to completing the country's full integration into the European club.

Sweden has had in its public finances. Stockholm backed off Emu for political reasons. It is now confident of meeting the stringent economic criteria set for entry, despite having a state deficit still well above target levels.

Polis show less than 25 per cent of voters in favour. The issue does not excite the same emotional debate as in Britain, but there is a clear majority opposed to Emu within SDP ranks. Opponents in parliament could force a referendum if the government pushed the issue, which the SDP is keen to avoid.

regarded very differently. The levels of opposition to the EU are, in general, lower - a function of the widely held view that full EU participation is a vital guarantee of security for a country that still fears instability across the border in Russia.

long-term interest rates more than 1 point lower than in Sweden. Mr Asbrink's signal of a Swedish delay will undoubtedly prompt louder expressions of doubt in Finland, where the economy is still strongly linked to Sweden.

But to date Mr Lipponen has indicated he is ready to part ways with Sweden. "We have to make our own decision," he says.

Hugh Carnegie

صديقا من الاله

Thailand likely to miss export target

By Ted Bardacke in Bangkok

Thailand is unlikely to reach this year's export growth target, the central bank said yesterday. This reflects a region-wide weakness in export industries, the result of dampening currency movements and falling demand from industrialised countries.

In July were only 5.2 per cent up year-on-year. It also revised down June's figures from a 2.5 per cent rise to a 0.5 per cent fall. The export target was lowered last month to 10.5 per cent, but yesterday's numbers show exports grew by only 3.8 per cent in the first seven months.

The failure of export growth to pick up has put Thai economic policy-makers in a difficult position. Manufacturing activity, private investment, credit growth and corporate profits are slowing sharply but any easing of interest rates could bring its own problems.

July, compared to a surplus of Bt20.5bn in June. This was a sign that short-term capital was leaving the country - a positive development from the central bank's point of view - but too much outflow could cause problems in funding the current account.

Despite the capital outflow, foreign currency reserves remained healthy at \$39.4bn. However, the bank has spent more than \$1bn during August defending the baht.

ASIA-PACIFIC NEWS DIGEST

Seoul deficit hits \$11.6bn

South Korea's current account deficit soared to \$11.6bn for the first seven months of 1996, exceeding a recent government estimate of \$11.3bn for the full year.

Officials predicted the current account deficit could reach a record \$18bn for the year. Inflation appears certain to exceed the government's 4.5 per cent target for the full year; prices increased 4.4 per cent in the first eight months.

Japanese store sales fall

Sales at Japan's large retail stores fell 4.1 per cent last month from a year earlier, the trade and industry ministry reported yesterday.

Wednesday's Bank of Japan survey of short-term economic prospects indicated the economy remained on a path to recovery, despite a fall in confidence among large manufacturers.

Australian deficit widens

Australia's current account deficit widened slightly to A\$1.28bn (US\$1bn), seasonally adjusted, in July, against June's revised A\$1.22bn.

Court go-ahead for Megawati

An Indonesian court has allowed Ms Megawati Sukarnoputri, the embattled opposition figurehead, to proceed with her legal action against the government, after the two sides failed to reach an out-of-court settlement.

Ties that bind Chinese grow looser

Clan links that have enriched the Hokkien of south-east Asia are fading, finds James Kynge

Japanese Aids expert arrested

By Emiko Terazono in Tokyo

Japanese prosecutors raided offices of the ministry of health and welfare yesterday and arrested the country's top expert on haemophilia and Aids.

The widening scandal stems from charges that he knowingly administered untreated blood products to hundreds of patients. It was the first raid on government offices by state prosecutors since the mid-1980s.

The investigation will be difficult, but necessary for the public to regain trust, said Mr Naoto Kan, health and welfare minister. The raids followed investigations begun last week against Green Cross, a drug company specialising in blood products.

"The secret," said the old man leaning across his rice bowl, "is the ability to eat bitterness" (endure hardship). His audience were guests at the 2nd Fujian World Convention, a gathering, on an island in northern Malaysia, of one of the Chinese diaspora's most successful communities.

Some local Hokkien tycoons did put in an appearance. There was Mr Lim Goh Tong, head of the Genting casino empire, and Mr Ting Pek Khing, one of the up-and-coming millionaires, whose company, Ekran, is building south-east Asia's largest hydroelectric dam in the forests of Borneo.

But they were exceptions. The truth is that the Hokkien community's wealthy members no longer need the support of the traditional mutual help networks. "The old networks are dying," said Mr Tan Kim Leong, secretary general of the Federation of Hokkien Associations of Malaysia, probably the region's largest grouping of overseas Chinese.

Overseas Chinese associations, or huiguan, are a feature of almost every village, town and city in Malaysia. Their now crumbling buildings generally stand in a prominent place on the main street and, in times past, their committees comprised the community's most influential men.

The Fujian Five: Liem Sioe Liong, Robert Kuok, Lim Goh Tong, Ting Pek Khing, Quek Long Chan. A map of Southeast Asia highlights Fujian province and its connections to other regions.

ing themselves increasingly marginalised in the communities they used to bind. For instance, one association for Teo Chew Chinese from the southern China city of Zhao Zhou stands opposite the Standard Chartered Bank in Kuala Lumpur.

NEWS: WORLD TRADE

Apec to help power investors

By Nikkii Taft in Sydney

Apec energy ministers have agreed to encourage private investment in power infrastructure in the Asia-Pacific region to help meet spiralling demand for electricity.

The region's demand for electricity is forecast to rise by 50 to 80 per cent by 2010, requiring investment of \$1,600bn in infrastructure. Multilateral agencies, such as the World Bank, are unlikely to be able to supply more than a small portion of these funds.

The meeting called for consideration of a progressive reduction in energy subsidies, and the promotion of pricing practices which reflect the economic cost of supply and using energy across the full energy cycle, including environmental costs.

US assails British tactics in 'open skies' negotiations

By Michael Skapinker, Aerospace Correspondent

Reclamations over the collapse of UK-US aviation talks continued yesterday, with a senior Washington official accusing Britain of engaging in "narrow, tit-for-tat bargaining".



Robert Ayling, defending BA slots at Heathrow

The US earlier this week called off planned negotiations, saying British proposals fell far short of what was required to conclude an "open skies" agreement.

The US has made such an agreement a precondition for approving the planned alliance between British Airways and American Airlines.

It is a fairly safe bet that Mr Hutomo's youngest son, Putra, was not standing at the docks in Jakarta yesterday to meet the first shipment of Indonesia's "national" cars unloaded from South Korea.

From the US and European standpoint, the issue is one of principle. The car policy is believed to breach a WTO "standstill" agreement under which Indonesia promised not to add rules to the tariff and tax structure for its automotive industry and threatens to violate a WTO article which stipulates that imports cannot be treated differently from locally manufactured products.

should be granted the right to fly to third countries from the UK and whether British carriers should be allowed to carry passengers domestically in the US. Virgin Atlantic, the UK carrier, is keen to set up a domestic US service under its own name, possibly by investing in an independent US airline.

Washington also objects to British proposals for a tribunal to monitor predatory pricing, seeing this as a way of reintroducing government control over fares.

Canadian company in Kazakh oil deal

By Sander Thoenes in Tashkent

Hurricane Hydrocarbons, a small Canadian oil company, has bought a big oil producer in Kazakhstan with proven reserves of 650m barrels.

The sale is the second in a series of three open tenders for oil industries in Kazakhstan, but none has so far attracted more than two bidders.

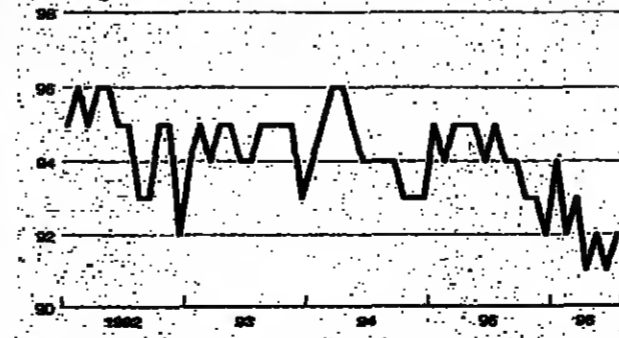
refinery earlier this summer, and Exxon and Texaco are expected to bid next month for the Aktyubinsk oil production association, which holds the licence to the Zhanazhol fields.

Samson and the government failed to agree on payment schedules, and rights to existing production ventures at the fields. Similar disagreements delayed the agreement with Hurricane as well; Mr John Komarnicki, Hurricane's president, said that the government wanted Hurricane to make its first payments early to allow a quick transfer of management control.

Indonesia's national car drives into trouble

The arrival of the first ones is likely to prompt a WTO complaint, writes Manuela Saragosa

Japanese car exports to Indonesia



March next year by which time it is expected to have manufacturing facilities in place in Indonesia. Under the conditions stipulated by the government, to maintain tax and tariff breaks the Timor car must meet a 20 per cent local content requirement by September 1997 and local content must rise to 40 per cent by the end of the second year and 60 per cent by the end of the third year of production.

ter is headed for the WTO after the cars arrive," says one diplomat. Mr Ircam, corporate public relations officer at Mr Hutomo's company, says the bank guarantee is being processed now, with financing for the shipments having been generated internally in the company and the arrangement being the state-owned Bank Bumi Daya.

the move is ostensibly aimed at forcing the company to meet the 20 per cent local content requirement by September next year or face the prospect of paying import duties retrospectively. But few analysts expect government regulations to be enforced on the matter because of Mr Hutomo's political weight.

"They're just buying time because they know the mat-

NEWS: INTERNATIONAL

### Zimbabwe strikers offered big rise

By Tony Hawkins in Harare

Zimbabwe's government was yesterday forced into an embarrassing climbdown in its dispute with striking civil servants, offering an extra 20 per cent pay rise, but union leaders said there would only be a return to work if dismissal notices were revoked.

Ministers were clearly hoping the cabinet's U-turn would end the paralysing week-long stoppage, but the unions demanded the reinstatement of all workers, a pledge of no discrimination against strike leaders and full pay for the duration of the strike.

The government had threatened to dismiss all public servants who failed to report for work last Friday, sending dismissal notices to more than 7,000 of the 180,000-strong civil service.

The unions have not yet accepted the extra 20 per cent, which will give most civil servants a total increase of between 26 per cent and 29 per cent, saying that they still want a higher cost-of-living increment. However, they have agreed to go back to work while negotiations continue, provided their reinstatement and no-discrimination demands are met.

Involvement of the Zimbabwe Congress of Trade Unions, which had threatened to call a general strike from next Monday, may have forced the government's hand. The news blackout by the state media on the strike was lifted yesterday, with the Daily Herald newspaper reporting an adjournment debate in parliament at which many government backbenchers had supported the strikers.

The official climbdown was expected, but the size of the award came as a surprise. If the 20 per cent award is accepted it will add \$170m to a projected 1996/97 budget deficit of \$680m. The award is equivalent to 2 per cent of GDP and would raise the forecast fiscal deficit to 10.5 per cent from the original 8.5 per cent estimated in the 1996 budget a month ago.

The strike settlement may force Harare into the hands of the IMF sooner than had been expected though the Fund's recipe for the fiscal crisis - larger spending cuts and accelerated privatisation - would be hard to swallow politically.

## Turkey-Iran gas pipeline triggers US alarm bells

By John Barham and Bruce Clark

The government of Mr Necmettin Erbakan, Turkey's first Islamist prime minister, is sending out some sharply conflicting foreign policy signals - in the hope of satisfying a huge variety of constituencies, at home and abroad.

On Wednesday, Mr Erbakan pledged to do everything possible to reactivate lagging economic ties with Libya, which have suffered because of the North African country's \$200m debt to Turkish creditors.

But on the same day as he threw out this latest challenge to Washington's effort to isolate "pariah" states, Mr Erbakan's government quietly signed a defence indus-

try co-operation agreement with Israel.

The accord was signed in spite of pleas from Iran, where Mr Erbakan recently paid a high-profile visit, for an end to Turkey's ties with the Jewish state.

US officials involved in handling Turkey have quietly hailed the maintenance of defence links with Israel as a sign that the Islamist-led government will preserve a pro-western policy, despite radical rhetoric.

Another such sign, the officials note, is the fact that Turkey has agreed to continue hosting the western military aircraft which enforce a no-fly zone over northern Iraq.

These pro-western moves have helped to blunt the US administration's objections

to the \$33m deal to export Iranian gas to Turkey that was announced amid some fanfare by Mr Erbakan earlier this month.

On the face of it, the deal was a body-blow to US efforts to induce its allies to isolate Iran. But privately, US officials question whether the deal to build a 1,320km "friendship pipeline" between Iran and Turkey will be implemented. Washington will use its influence to minimise the chances of the project attracting finance.

The pipeline also faces formidable technical and engineering challenges, according to Mr Henry Rich, an energy analyst at brokers Wood Mackenzie.

Turkey's rapprochement with Iran has also met a

restrained reaction in west European capitals. Mr Klaus Kinkel, the German foreign minister, has described Ankara's dealing with Tehran as "normal diplomatic relations, with which we have no right to interfere".

Britain, while more critical than France and Germany of Iran's behaviour, also takes the view that "we have no grounds to oppose" Turkish-Iranian economic relations, according to one UK official.

However observers of the region say it is still far from clear whether the US administration can succeed in its effort to limit the diplomatic and political damage from the advent of an Islamist-led government in Ankara.

Whether or not the Turkish-Iranian gas deal is imple-

mented, it has triggered alarm bells in the US media and foreign policy establishment - and among Republicans who are looking for flaws in the administration's external record.

Mr Richard Perle, an influential defence expert who now advises Mr Bob Dole, the Republican presidential candidate, has accused President Bill Clinton of driving Ankara away from the western camp through his "indifference" to Turkish concerns.

While a US debate on "who lost Turkey" could work to Ankara's advantage, observers say, it would certainly wreck the chances of Turkey's relationship with Iran being politely ignored in the west.



at least one worrying development has already been speeded along by the new Turkish foreign policy. The oil-rich republic of Azerbaijan, where the US has worked to gain influence, is apparently following the example of its ethnic cousins in Turkey and mending fences with Iran. Mr Hasan Hasanov, Azerbaijan foreign minister, told Iran's leaders this week that he wanted to "get rid of possible hindrances" in bilateral ties. While the US has forced Azerbaijan to exclude Iran from an \$3bn oil project - the biggest in the Caspian - the Azerbaijanis did agree in June to give Iran a 10 per cent share in a \$4bn drilling effort.



A Palestinian reads a paper outside his Jerusalem shop during the strike which closed most Arab premises yesterday

### Bid to cool Palestinian anger

By Herve Prusser in Jerusalem

Tension eased slightly yesterday as Israeli and Palestinian negotiators pledged to continue the Middle East peace process - after a four-hour general strike called by Mr Yassir Arafat, president of the Palestinian Authority, had been widely observed in the West Bank and Gaza.

But unidentified gunmen opened fire on an Israeli bus near Bethlehem, wounding two people. And further clashes are likely today if Palestinian Muslims without permits to enter Jerusalem heed Mr Arafat's call to attend Friday prayers at the city's al-Aqsa mosque.

The call is intended as a further protest against recent Israeli moves to bolster Jewish settlements in the West Bank and to demolish Palestinian offices in East Jerusalem.

The negotiators - General Dan Shomron, Israel's former army commander, and Mr Saeb Erekat, Palestinian local government minister - agreed to resume regular meetings next week. But Mr Erekat defended his leader's controversial call to prevent "entitled to worship in Christian and Muslim holy places in Jerusalem, and we have been encouraging the Israeli government to lift this siege around Jerusalem," he said, referring to restrictions on Palestinian West Bank residents entering the city.

the peace process alive was to be made last night at a meeting between Mr Dore Gold, foreign policy adviser to Israel's right-wing prime minister, Mr Benjamin Netanyahu, and his Palestinian equivalent, Mr Mahmoud Abbas.

But even as Israeli negotiators were promising to smooth out "misunderstandings", their government provoked new Palestinian anger by announcing plans for yet more housing in Jewish settlements on the West Bank. Israeli media put the number of new units planned at 2,000-3,500.

The UK and Jordan criticised the Netanyahu government's moves to increase Jewish settlements, as did the Israeli Labour party, which lost power to Mr Netanyahu's Likud bloc in last May's general election.

The British Foreign Office, describing the settlements as "illegal and an obstacle to peace", called on both sides "to avoid taking precipitate actions which could throw the peace process into a downward spiral".

The G7 agreed at their June summit in Lyons that

the scheme should be finalised by the time of the IMF and World Bank annual meetings late next month. But IMF and World Bank officials fear the Paris Club is becoming a serious obstacle to meeting this timetable: it has yet to say whether, or on what terms, it would be prepared to contribute.

Another lingering problem is disagreement about how the IMF should finance its contribution. Germany is leading resistance to a proposed sale and reinvestment of IMF gold reserves.

However, the initiative received some fresh momentum earlier this week, when the first full details of its proposed mechanics - including case studies of its application to Uganda and Nicaragua - were circulated to IMF and World Bank board members for discussion early next month.

These embody greater flexibility than earlier proposals. For example, the six-year track record of good behaviour previously demanded before countries become eligible for extra debt relief can

## Paris Club threat to debt initiative

By Robert Choto, Economics Editor

The World Bank and International Monetary Fund have drawn up detailed proposals for their \$5.6bn initiative to tackle the debt of the world's poorest countries. But officials say hopes of early agreement on the plan are being threatened by the "Paris Club" of creditor governments.

The initiative aims to free up to 20 poor countries, mostly in Africa, from the burden of unsustainably high debt repayments. The World Bank and IMF want Paris Club governments to raise the 67 per cent debt relief already offered to eligible countries under the "Naples terms" (agreed by the Group of Seven leading countries) to as much as 90 per cent. The World Bank, IMF and other multilateral lenders would then offer relief on any money owed to them to reduce the country's overall debt burden to a sustainable level.

The G7 agreed at their June summit in Lyons that

now be reduced to take account of past performance. The latest proposals also allow greater flexibility in assessing how countries on the borderline of debt sustainability could participate. Social reforms and the reduction of poverty levels are also suggested as a possible condition for participation, alongside macroeconomic performance and structural economic reforms.

"Among the possible social programmes that could be monitored are the allocation budget and total health budget to basic education and primary health care," the document suggests. It also says the IMF might provide grants rather than further loans.

Mr Justin Forsyth, at Oxfam International, the development lobby group, said that the latest proposals represented an important advance. But he warned: "The whole debt initiative is in danger of ending up as an empty charade if the Paris Club and IMF don't make immediate progress."

## South Africa gives blacks a bigger stake in economy

Roger Matthews gives the background to Anglo's assets sale

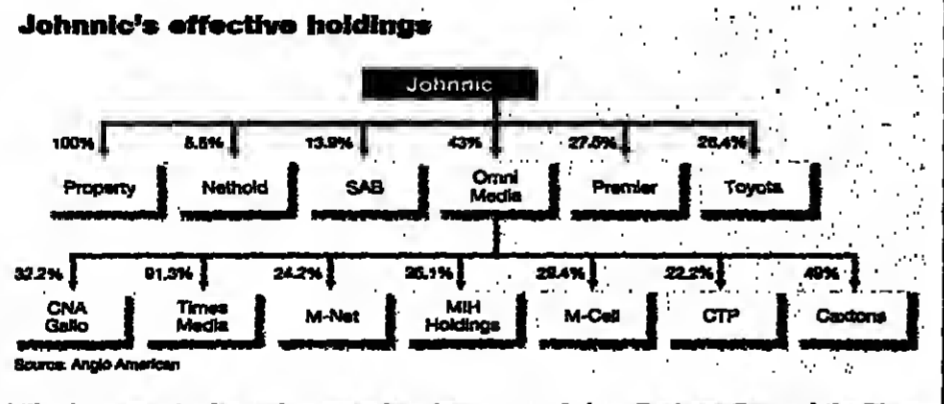
There was much hand-shaking and back-slapping on the top floor of Anglo American's Johannesburg headquarters on Wednesday night as negotiators celebrated the biggest sale of corporate assets from white to black in South African history.

For Anglo it was the culmination of a 29-month process since the country's largest conglomerate announced it was offering its nearly 48 per cent of Johnnic, an industrial and media holding company, to widely representative black interests.

Anglo made clear that though the offer was designed to give the black community a larger stake in the economy, it was not a charitable sale, as the price subsequently demonstrated, nor was it intended to allow a few to become rich quickly.

Putting together such a deal was a complex and time-consuming task as Anglo's directors feared. The challenge was not just to negotiate a deal, but to find a consortium of black interests which could both raise the necessary finance, and work harmoniously together.

When President Nelson Mandela announced in April that Mr Cyril Ramaphosa, secretary-general of the African National Congress, was leaving politics to pursue a business career, it was presented as a strategic move by the ruling party.



skills that were in demand. The National Empowerment Consortium (NEC), which is to take control of Johnnic and provide 10 of its 20 board members, groups some 50 interests. These range from New Africa Investments, of which Mr Ramaphosa is deputy chairman, through Worldwide Africa, headed by Mr Wiseman Nkuhlu, to trade unions and smaller companies.

They now have 60 days to come up with the R1.5bn (\$333m) to acquire the initial 20 per cent stake. In that time, they will be talking to the companies which make up Johnnic, whose activities include brewing, car making, pay-television, food, pharmaceuticals, property and newspapers.

Staff have been given reassurances on employment, at least in the short term, but Mr Ramaphosa has made it clear that NEC is interested in much more than ownership. It also wishes to manage.

The ideas it has for adding value to Johnnic, which has just reported a 41 per cent increase to R489m in equity-accounted earnings in the year to June 30, will take time to emerge. NEC members stressed

yesterday that many of the companies they would acquire were operating successfully. There would be no hurry to make management changes, but they would wish to appoint some of their own staff.

The NEC has to move cautiously; some 18 months lie ahead before it can exercise the option to acquire a further 15 per cent of Johnnic, plus 6 per cent more which will be sold on to the consortium's smallest members and the public.

Its approach to Johnnic's media interests will be closely watched. Senior ANC members, including Mr Ramaphosa, have long felt the need for a newspaper more accurately to reflect their views, and have not tried to hide their anger at the editorial stance of the publications they are now acquiring. For some, acquisition of Johnnic's media subsidiaries is the biggest prize.

Mr Ramaphosa says the new owners will respect editorial independence, but rejected the need for any "contractual undertaking" at this stage. Anglo's eagerness for Pearson, the British media group which owns the Financial Times, to take a stake in two publications,

Business Day and the Financial Mail, reflects the concern about NEC's longer-term ambitions.

No less interesting will be the involvement of the trade unions, whose pension funds will be contributing to the R1.5m needed for the initial share purchase. The Congress of South African Trade Unions (Cosatu) has notably failed to keep pace with the government's cautious conversion to market economics.

It is hostile to privatisation, and sees state companies as a vital tool in the struggle to promote black interests. If, and how, it will involve itself in the management of private-sector companies should emerge in the next two months as the relationship between the different NEC parties is put on a more formal basis.

For the investing public, the most reassuring aspect may be that none of the participants can let the new owners fail. As the biggest, and by far most politically loaded sale of assets to black owners, success is vital. If extra help is needed, the government has indicated that when awarding contracts it will look favourably at black-owned companies.

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# Architect of president's strategy quits

By Paul Waldmeir in Chicago

The architect of the political strategy which has given President Bill Clinton a commanding lead in the race for the White House resigned last night in response to a tabloid news story alleging he allowed a prostitute to eavesdrop on a presidential phone call.

Mr Dick Morris has been a powerful influence over the president in recent months, persuading him to abandon some cherished liberal positions to place himself firmly in the centre of the political spectrum. That approach, based on extensive opinion polling, has let the president and the Democratic party make a comeback after the Republican victory in the 1994 Congressional elections. Time magazine wrote its cover story this week about Mr Morris, under the title "The man who has Clinton's ear".

Mr Morris argued the president could reach this centre point, which polling showed would prove popular with voters, by moving to the right and appropriating the Republican agenda on issues such as welfare reform. This approach put Mr Clinton at odds with more liberal Democrats, and gave rise to charges he was a political opportunist, adopting policies with an eye to campaign advantage rather than principle. The fact Mr Morris had previously worked as a consultant to Republican candidates appeared to give substance to these charges.

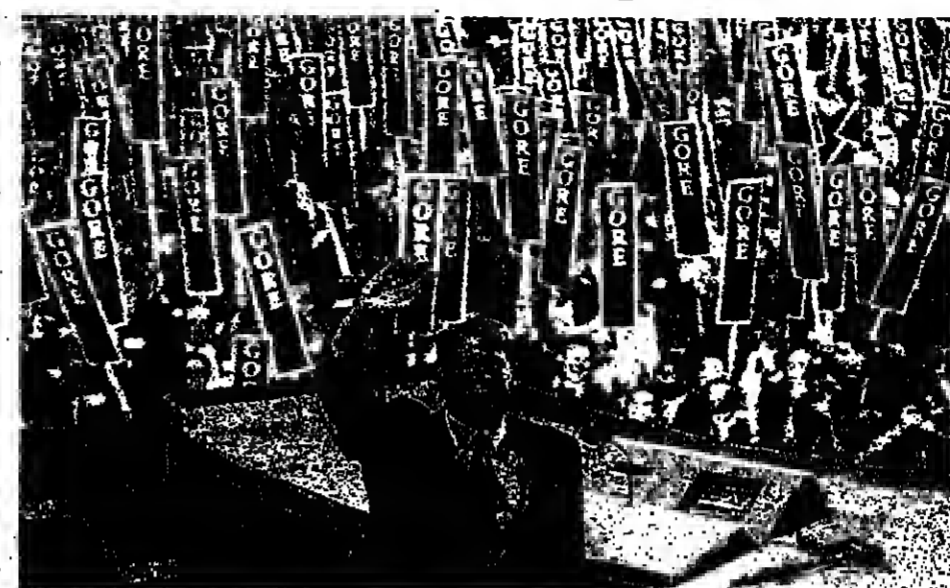
The circumstances surrounding Mr Morris' resignation could prove an embarrassment to the president, who has stressed the importance of "family values" in his election campaign, largely at Mr Morris' insistence. A story in yesterday's New York Post alleged Mr Morris had a long affair with a prostitute, showing her advance copies of speeches delivered by Mrs Hillary Clinton and Vice President Al Gore.

# Vice president gives prosaic recitation of US administration's policy record Gore leaves 'vision thing' to Clinton

The old cliché did apply to Mr Bob Dole two Thursdays ago in San Diego. The newly crowned Republican presidential candidate faced "the most important speech of his career" and if he was not exactly memorable he did not flunk the test either.

No comparable sword of Damocles hung over President Bill Clinton's head in Chicago last night as it had, arguably, in New York four years ago, when he still needed to stamp his imprimatur on his party and the country. This speech, from the throne to a Democratic gathering that has been more coronation than convention was merely a continuum in the steady incantation of words, ideas and thoughts flowing from this most verbally fluent of presidents.

More than that, to borrow another cliché from his favourite pastime, the ball was teed up for his address accepting the nomination by just about every other convention speaker, none more so than Vice President Al Gore on Wednesday night. Junior members of the ticket normally do not get the third night of a convention, mostly to themselves. That Mr Clinton gave Mr Gore this honour is a fair tribute to their good working and personal relationship in which the vice president complements but does not threaten to upstage the president.



Vice President Al Gore waves to delegates before his speech to the convention

Mr Gore obliged by relieving Mr Clinton of one burden - the prosaic recitation of the administration's policy record. He ran through the long litany of bills covering family leave, student loans, portable health insurance, safe drinking water, handgun control and much more besides. That should leave Mr Clinton free to focus more on his vision for a second term as well as for new policy initiatives such as he has been unveiling every day on his train trip to Chicago. Last night's expected proposals included more borrowing from the Republican play-book, including capital gains tax breaks for homeowners and tax incentives for businesses who hire welfare recipients.

Mr Gore also stuck to the convention script by telling the sort of "personal story" - the death of his tobacco-addicted sister from cancer - that is sure to feature in the president's address. "It has been a long time," the vice president said, "since we've had a president so in tune with ordinary lives."

Mr Gore and Senator Chris Dodd of Connecticut, in his speech placing Mr Clinton's name in nomination, also gave more than a foretaste of how the Democratic ticket will take on the Republicans over the next 10 weeks. There will be no unprovoked personal Dole-bashing. "He is a good and decent man," Mr Gore said. "Only

responsibility and accountability". On the 21st Century Express en route to Chicago, he found a way to relate his topic of the day - education, crime, the environment - to the future of today's children. That has been the overriding convention theme and it would be logical for Mr Clinton to put the seal on the week in similar vein. He might also borrow a sentence or two from his recently published book, itself more of an extended speech than a political treatise. One passage seems very relevant in the contest against a Republican party committed to much devolution of power from Washington to the states and the private sector. "My vision does not seek to promote government but to perfect it, to make it a better servant of our people," Mr Clinton writes. "It doesn't seek to demean the free marketplace, but to strengthen it and to take account of what it cannot be expected to do." On Tuesday former governor Mario Cuomo of New York urged delegates to "forget about new Democrats, old Democrats, conservative Democrats, liberal Democrats and neo-Democrats" and re-elect Bill Clinton. It is a fair bet that the president had all of them in mind in drafting his speech yesterday.

Jurek Martin

# Wildfires consume forests and funds across the west

By Christopher Parkes in Los Angeles

One of the worst US summer wildfire seasons on record has so far blackened almost 5m acres across the west, drained firefighting funds and manpower reserves, and fuelled smouldering disputes over forest management. Hundreds of blazes, mostly sparked by lightning, have swept the region since late June, consuming three times the area

burnt at this point last year. Mr Bruce Babbitt, interior secretary, is to ask Congress for funds to top up budgets currently being depleted by up to \$3m a day. The Los Angeles authorities yesterday called for the early delivery of two "super scooper" water-dumping aircraft, leased from Canada under a contract due to start in October. The craft, which scoop up water by skimming the surface of reservoirs or

the sea, have been summoned to fight a four-day uncontrolled blaze 40 miles north of the city. The fire storm, which is threatening oil and gas pipelines, is one of several hundred in the west which have forced thousands of tourists off popular routes through national parks and mainly remote areas. It has also severely disrupted traffic on the Golden State Freeway, one of California's main road arteries. Southern California's riskiest

fire season normally starts in the autumn with the onset of the Santa Ana winds, which bring hot, dry air from the desert interior. Although no deaths have yet been reported, and property damage has been limited mainly to holiday homes and outbuildings, the conflagrations have roused memories of recent tragedies such as the death of 14 firefighters in Colorado in 1994, and the loss of 25 lives and more than

3,000 homes near Oakland, California, in 1991. A battalion of California-based marines has been put on standby to help the 20,000 firefighters, volunteers, military personnel and prisoners already striving to contain an estimated 50 serious blazes covering more than 300,000 acres. On Monday the number of fires classified as "major" by the Idaho-based National Fire Centre was just 20. The total has risen

sharply with the arrival of a series of "dry" thunderstorms - producing lightning but no rain. Dozens of small fires, ambient air temperatures of more than 100° F, and the dangers from rattlesnakes, bears, mountain lions and swarms of so-called "meat bees" fleeing the flames have added to the strain on firefighters. The forest products industry, claiming 47m acres of national lands present a severe fire risk,

chose this week to step up its campaign to be allowed greater access to cut and process "thinners" in federal forests. While the American Forest and Paper Association complained that lawsuits by environmental groups had prevented its members from cutting agreed quotas - and contributed to the risk - a federal programme for controlled burns to clean up national woods has run into political opposition in California.

# 'Newt of the north' to make his sales pitch

By Bernard Simon in Toronto

Little more than a year ago, business people in Canada's industrial heartland derisively wrote off their province as the People's Republic of Ontario. Rising taxes, sweeping pro-union laws and stricter environmental rules earned Mr Floyd Laughren, finance minister in the then-social democratic government, the nickname Pink Floyd. The allusions have moved to the other extreme however, since the Tories have a Progressive Conservative government in mid-1995. The new premier, Mr Mike Harris, has been labelled "Newt of the North" after the combative speaker of the US House of Representatives. But the Ontario Tories' targets for cutting taxes and eliminating the budget deficit are more ambitious.

"We have a good product to sell," Mr Harris said in an interview this week on the eve of a trip to the UK, Germany and France to persuade companies, bond investors and travel agents that Ontario is open for business. The Tories have repealed the pro-union labour law, given notice of plans to ease environmental regulations, and begun a sweeping reform of the health care system.

Financial markets have already responded enthusiastically. The premium on Ontario 10-year bonds has shrunk in the past four years from 0.90 to 0.18 percentage points above comparable Government of Canada securities. The spread is now even narrower than it was before bond-rating agencies stripped away the province's Triple-A credit rating in 1991. Ontario, which contributes about 40 per cent of Canada's economic output, was the biggest non-sovereign borrower on international capital markets in the early 1990s. But the Tories have promised to eliminate the budget deficit, running at C\$11.5bn (US\$8.06bn) a year when



Harris: sales tour

they took office, by 2001. Reaching that target will be more difficult as a result of generous tax cuts, the first of which kicked in last month. Under the Tories' plan, Ontario's basic income tax rate will slide from 58 per cent of the federal rate to 40.5 per cent in 1999. "Supply side" always works," Mr Harris says confidently. The secret, he says, is to ensure tax cuts are accompanied by an assault on government spending. Ontario's Tories have few sacred cows. They chopped welfare payments by 22 per cent shortly after taking office, ended subsidies to business, and imposed user fees on prescription drugs for senior citizens. Such actions have encountered some strong resistance. About 55,000 civil servants staged a five-week strike earlier this year. Doctors, who are paid by the provincial health care scheme, have complained about inadequate incomes and declining investment. A battle is looming with the teachers' union. The Tories are also examining government assets and services with a view to privatisation. "The programme or the service might be sacred, but who delivers it is not sacred," Mr Harris says. However, the government is taking a cautious line on two of its jewels: Ontario Hydro, North America's biggest power utility, and the Liquor Control Board of Ontario, the world's biggest liquor retailer.

# Venezuelan bank sale suspended

The Venezuelan government has been forced to suspend the sale of Banco de Venezuela, one of the country's largest banks, after confusion over the bidding process scared off interested investors. Three of the four interested bidders are said to have been concerned about the legal basis of the tender, leaving Banco Santander as the sole remaining bidder. The sale of the bank, which was scheduled for today, was "postponed indefinitely", said Mrs Esther de Margulis, head of the State Deposit Guarantee Fund (Fogade), the majority shareholder in the bank. Late last week the ruling Democratic Action party charged former Banco de Venezuela officials with trafficking inside information to interested buyers and thus pushing down the bank's sale price. A judge had temporarily suspended the sale only to reverse her decision shortly thereafter.

The stock exchange fell markedly in response to news of the suspension. The index of the Caracas Stock Exchange at mid-morning on Thursday had fallen 50 points to 4,688, after rallying to a high of Wednesday of 4,732. The incident has sparked a heated debate between political parties and thrown doubt over the future of the privatisation programme, which is supposed to raise in excess of \$5bn by the end of next year. The government's privatisation plan suffered another setback this week when it failed in its attempts to get Japanese investors with a 20 per cent stake in the aluminium smelter Venalum to rescind their veto right on privatisation. Mr Elias Ynasty, president of Venalum's parent company Corporación de Guayana (CVG), accused the Japanese firm Showa Denko, one of the shareholders, of wanting to "maintain a privileged position in Venalum" and thereby blocking the government's aluminium sector privatisation programme. Ray Collin, Caracas

**Libyan award for Farrakhan**  
Mr Louis Farrakhan, the leader of the US Nation of Islam, has arrived in Libya to receive a human rights prize worth \$250,000, the official Libyan news agency Jana said yesterday. On Wednesday the US Treasury Department denied Mr Farrakhan's application to receive the award or \$1bn Libyan leader Col Muammar Gaddafi had pledged to the Nation of Islam after meeting Mr Farrakhan in Libya last January. The Treasury said that Libya had been on Washington's list of states that sponsor international "terrorism" since December 1979, and that it had refused to turn over two Libyan suspects in the 1988 bombing of Pan Am flight 103 over Lockerbie, Scotland. On Tuesday Mr Farrakhan said he would fight any US government effort to deny him the Libyan funds, which he said would be used to build schools and business in American black communities. Reuters, Tunis

**Drugs baron revokes claims**  
A Peruvian drugs baron has unexpectedly withdrawn allegations he made last week against President Alberto Fujimori's chief adviser and intelligence service strongman, Mr Vladimiro Montesinos. Mr Demetrio Chavez Penabazerra, better known as "Vaticano", had testified in some detail before three judges that he paid Mr Montesinos around \$50,000 a month throughout 1991 in exchange for freedom to run drugs out of his illegal airstrip in the Hualaga valley, Peru's cocaine-trafficking heartland. In his various court appearances, Mr Vaticano has seemed lucid and confused by turns. Sally Bowser, Lima

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Friday August 30 1996

Deadlock in Palestine

Benjamin Netanyahu's election as Israel's prime minister three months ago was bound to bring confrontation with the Palestinians. Although Mr Netanyahu claims to respect the letter of agreements reached by the previous Labour government...

Green accounts

Accountants prefer being precisely wrong to being roughly right. Their reluctance to stray beyond the readily measurable is understandable, but not always sustainable. The question is no longer, for example, whether to "green" the national accounts...

GEC's fat cat

The row over the proposed compensation for Mr George Simpson, the incoming chief executive of the UK's General Electric Company, has reached the point where it needs to be put in context. If GEC has offended its shareholders by restructuring Mr Simpson's pay package wrongly...



Unconventional but consummate campaigner: Clinton doing what he likes best and does best on a whistle-stop appearance at Royal Oak, Michigan, this week

Reborn as a New Democrat
Philip Stephens on Bill Clinton's winning combination of deft campaigning, astute political positioning and simple good luck



It was Theodore Roosevelt, a Republican president, who remarked that "the most successful politician is he who says what the people are thinking most often in the loudest voice... No-one has learned this lesson better than Bill Clinton.

This past week Mr Clinton has been doing what he likes best and does best: campaigning. In the manner of an illustrious Democrat predecessor, Harry Truman, he spoke to small-town America from the open platform of a train.

Charles Rangel, a Democratic congressman and critic of the legislation, got it right with the laconic remark that "I always said that the worst place to be is between President Clinton and his re-election".

But Mr Clinton, reborn as a New Democrat, has run faster into the centre. His commitment to abated budget by 2002 has welded his party to fiscal conservatism.

Forget about the poor, the dispossessed and the single mothers. They do not vote. Mr Clinton is speaking to the audience with electoral clout: America's middle-class families.

Look for new ideas and they come from the Democratic Leadership Committee, the New Democrat caucus once chaired by Mr Clinton. Mr Gore's comment that the choice at the election is between a bridge to the past and a bridge to the future might have been directed as much at Old Democrats as at the 73-year-old Mr Dole.

The biggest risk to Mr Clinton's re-election may lie in Mr Dole's plans for sweeping cuts in income and capital gains taxes. The sums in the Republican package - the cost is \$650bn over six years - do not add up.

Richardson is an old Italian hand, having served in the Milan consulate-general in the 1960s and as head of chancery in Rome in the mid-1980s. He will therefore be acutely aware of Italians' love of titles, most of whom boast of being at least doctore or professore.

At a reception for Germany's business and banking elite in celebration of the Bundesbank president's 65th birthday, Tietmeyer pulled out a faded leaflet, marking the occasion of his passing his school leaving exams in 1952.

His geography teacher had penned a good luck message to "a champion of the European Coal and Steel Community (forerunner of the European Union) and of a new Europe".

Urban has bought the waxwork image of Lech Walesa, the former Solidarity leader and ex-President. A waxworks museum in Copenhagen decided that Walesa was no longer sufficiently important to be on display so Urban picked it up for a mere \$3,000 - peanuts for the now wealthy scribbler.

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The danger for Mr Clinton is that the voters may ignore the logic of the arithmetic. Americans like tax cuts. So the president has already offered his own package, focused on tax credits for children, deductions for education and incentives for savings.

There is a more serious problem. If not his government, what? The president's dilemma is that of every centre-left leader in the industrialised world. The parallels with Tony Blair, the leader of Britain's Labour party, are everywhere. Mr Clinton's answer is value-based politics.

Mr Clinton has probably done enough to be the first Democrat since Mr Roosevelt to return to the White House for a second term. His prospectus will not - as he claims - recreate the American dream. That is impossible.

The effortless economic growth of the post-war decades which guaranteed the country's children a higher standard of living than their parents has gone forever. But the voters do not want to hear that. So Mr Clinton will not tell them.

OBSERVER

Sub-Urban comedy

Are you famous? Do you bank for immortality, by having your likeness constructed in wax? Then here's a cautionary tale. Jerry Urban, the communist government's mouthpiece in Poland during the miserable 1980s, when he regularly appeared on television to defend the military dictatorship...

Plain speaking

Has the UK subtly downgraded the status of its Rome embassy? We only ask because Britain's new ambassador to the Quirinale remains a plain "Mister" rather than a "Sir". Tom Richardson - who took over in July from Sir Patrick Fairweather - is the first mister to take up the ambassadorship...

Ramming it home

Indian police would like a word with Sukh Ram, who was vice-consul in London until May. But there's one problem: Ram has recently been residing at Southend-on-Sea, a British coastal town. Part of his job as minister involved awarding contracts to private-sector companies during India's telecoms privatisation programme last year.

Bucking trends

President Clinton's pre-election onslaught on the tobacco industry hasn't prevented its biggest companies from turning up at the Democratic convention in Chicago. Philip Morris, RJ Reynolds and Brown & Williamson have all been winning and dining delegates, the recipients of his hospitality generally turning out to be delegates from the strictly no-smoking United Centre in Chicago.

50 years ago

French Black Market The black market in gold coins and British and American banknotes has witnessed a marked decline in rates in the last few months. The gold louis, for example, can now be bought for a little over Frs. 4,000, whereas it was valued at over Frs. 5,500 in June and over Frs. 6,500 in May. There are several reasons to explain the depreciation of gold on the black market.

US Industrial Activity The trend towards greater production and distribution in the U.S. continued in July and the first half of August in the face of sharp advances in commodity prices, according to a summary of business and financial conditions according to a summary compiled by the Federal Reserve System.

Clinton set to cut tax burden on homeowners

By Jurek Martin and Patti Waldmeir in Chicago

President Bill Clinton was expected last night to steal some more Republican thunder with a proposal substantially to ease the capital gains tax burden on middle class and retired homeowners.

But the first controversy in an otherwise smooth Democrat convention week erupted yesterday with the resignation of Mr Dick Morris, the president's controversial and influential political adviser.

A supermarket tabloid devoted to scandal, reported that Mr Morris, seen as the main architect of the president's move to the centre over the past two years, had shared confidential information about his relationship with the Clintons with a prostitute.

This threatened to draw media attention away from the president's nomination acceptance speech, in which he was to unveil the capital gains tax

cut and other initiatives on small businesses and education. He was expected to state his vision for a second four years in the White House, if re-elected in November.

Vice-president Al Gore has told the convention that the Democratic ticket represented the party of "hope" and the Republicans that of the past.

White House sides convention reports Page 5 Reborn as New Democrat Page 9

firmly that Mr Clinton's address, at prime evening television time across the country, would include a targeted capital gains tax reduction, designed as a sharp contrast to the across-the-board and much larger cut in taxes proposed by Mr Bob Dole, Republican candidate.

His \$549bn multi-year lower tax package, Democratic strategists claimed, would lead to a

much larger federal budget deficit.

The Clinton proposal, estimated to cost \$1.4bn in revenues over several years, would grant a \$500,000 exemption from capital gains to all homeowners on the sale of a primary residence.

Current law allows a home-seller to escape capital gains only if a new residence of equal or greater value is purchased within two years. There is an additional \$25,000 exemption available to those 55 or over.

White House officials said it would not penalise those who sell houses and move into smaller residences - either because they have retired or their circumstances have changed for the worse or as a result of a job relocation to a less expensive area.

It would also benefit long-time homeowners whose residences appreciated greatly in value in the boom housing market of the 1990s.

Flemings fined and agrees to pay \$19m in refunds

By Nicholas Denton in London and John Ridding in Hong Kong

Flemings, the investment banking group, faced deep embarrassment yesterday as regulators in London and Hong Kong imposed fines of £700,000 (\$1,085,000), announced \$19.3m in compensation payments to investors and revealed that one of the group's top fund managers had diverted profitable trades to his own personal account.

The fines, levied by Imro on four fund management companies in the Flemings group, were the third highest ever imposed by the UK fund management industry regulator.

Imro, which has become one of the most powerful UK regulators under Mr Phillip Thorpe, terminated the registration of the London arm of Jardine Fleming Investment Management, the associate company in Hong Kong in which the misconduct took place. Mr Robert Thomas, the former chief executive of JFIM, became the first individual to be taken off Imro's register.

Mr Thorpe, Imro's chief executive, said the disciplinary action was a warning that international fund management companies based in the UK "must ensure those London standards are applied throughout the operation".

In Hong Kong, the Securities and Futures Commission announced that Jardine Fleming, the Far East joint venture between Flemings and Jardine Matheson, had agreed to refund \$19.3m to three funds which lost as a result of the irregularities.

Part of the compensation will come from personal profits of more than \$3m made by Mr Colin Armstrong, the 43-year-old former chief investment officer of JFIM and the man at the centre of the scandal. Investigators found that Mr Armstrong, over a period of two years, systematically placed profitable option trades in his own account and that of Ninja Trust, a JFIM hedge fund with which he was associated.

Less profitable and loss-making trades were left with the three funds which will get compensation - JF Pacific Securities Trust, Fleming Pacific Fund and an international institution which investigators have not identified.

Funds managed by Flemings, the parent company, and subcontracted to JFIM for investment in the Far East were not disadvantaged by Mr Armstrong's activities. But, as well as fining the JFIM arm £400,000, Imro fined three UK-based Flemings fund management companies £100,000 each for failing to check procedures at their Hong Kong associate.

THE LEX COLUMN

Olivetti's wake-up call

One of the consequences of Olivetti's massive L2.257bn rights issue last December was to give non-Italian investors 70 per cent ownership of the company. At the time, Mr Carlo De Benedetti, the group's chairman, said that would allow institutional shareholders rather than him to call the shots. He is now being taken at his word.

Since the rights issue, Olivetti's share price has continued to perform dismally and shareholders are understandably unhappy. A group, which collectively accounts for a quarter of Olivetti's equity, met in London earlier this week to discuss ways of forcing the company to boost shareholder value. Mr De Benedetti's own continuing role at Olivetti was rightly questioned. This muscle-flexing should not only be good for Olivetti; evidence that Anglo-Saxon shareholders are taking a more active approach to underperforming continental companies could mark a defining point in European corporate governance.



Share price relative to the Dax index

Source: DataStream

while before Mr Schrempf can look GE chairman Mr Jack Welch straight in the eye.

Jardine Fleming

Jardine Fleming has had a lucky escape in Hong Kong. Sustained trading irregularities combined with compliance and supervision failures drove Barings out of business. A similar catalogue of ignominy at JF, the joint venture between Robert Fleming and Jardine Matheson, has resulted in little more than some small fines, a \$10m compensation payment and substantial egg on the face.

Once more, the dangers of head office losing control of the more distant reaches of the empire are clear. Two main lessons emerge: first, the exciting task of growing the business needs to be matched by similar attention to unglamorous back-up plumbing. Second, globalisation is a concept which extends to companies' compliance procedures. There is no place for the belief that different, lower standards can be tolerated in far-flung markets.

If JF's experience is to serve a useful purpose, it will act as a timely reminder to those managements who failed to learn these lessons of Barings. Investors, meanwhile, should take comfort. Yesterday's news says more about Hong Kong's past than its future. Indeed, regulation of investment management is now on a similar footing to the UK.

Ladbroke/Hilton

There was never any doubt as to the wisdom of ending the 32-year split in ownership of the Hilton

brand - it was just a matter of how to stick it back together. The solution reached by the owners, Hilton Hotels Corporation (HHC) and Ladbroke, looks this right one. Revenue will be enhanced through joint marketing of the Hilton brand, bringing Ladbroke hotels into HHC's loyalty programmes, and more rapid expansion of Hilton's global hotel network. There should be some cost savings as well - enough for the deal to add \$15m to both companies' profits in 1998. If the relationship works, a wholesale merger would be likely eventually.

Ladbroke shareholders who were banking on a bid for the group may not be delighted. Joint ownership of the Hilton brand makes Ladbroke effectively hid proof. And instead of receiving cash from a takeover, investors are now more likely to have to back a rights issue. However, Ladbroke has scored two notable victories. HHC is going to buy a stake, and while this will probably be achieved via an earnings diluting placing of new shares, it demonstrates commitment to the deal and confidence in Ladbroke's share price. More importantly, Ladbroke will be brought in on HHC gaming projects and it can cherry pick investments; given the high returns achievable on US casino projects, this more than makes up for the threat of a cash call. For a claustrophobic HHC, such concessions are probably fair exchange for gaining broader access to the international hotel market.

Rolls-Royce

The good news from Rolls-Royce is that it has set itself a target of doubling return on capital over the next five years. The bad news is that the new target - which equates to 16 per cent after adding back the goodwill that has been written off its capital base - is probably insufficient to stop the aero-engine group destroying shareholder value. The reason is that the aero-engine industry is extremely cyclical; not only are sales highly geared to world economic activity; because of high fixed costs, there is a disproportionate effect on profits. Five years from now may well be the peak of the current cyclical upswing, after which profitability could plummet. In order to cover its cost of capital, Rolls needs to earn an average return of 12 per cent over the cycle. If it only makes 16 per cent at the peak, the prospects of doing so are not great.

Franc hits five-month low as gloom grips France

By David Owen in Paris

The franc and the Paris stock market took a tumble yesterday while the government came under attack from both ends of the political spectrum, deepening the despondency that has gripped France recently. The franc slid to a five-month low against the D-Mark before recovering, amid rumours of Bank of France intervention, to end the day in London only marginally down.

Paris stocks were harder hit, with the benchmark CAC-40 index tumbling below the psychologically important 2,000 level to close at 1,975.56, a loss of 1.37 per cent.

There was also bad news on the public spending front when Mr Jean-Marie Spaeth, chairman of the Caisse Nationale d'Assurance Maladie, the national healthcare agency, predicted in a newspaper interview that the 1996

social security deficit would be between FF750bn and FF755bn (\$9.8bn-\$10.8bn).

There seems scant relief in store for prime minister Alain Juppé's increasingly jittery government - unemployment figures could set a new record and next week's second-quarter gross domestic product figures are expected to reveal little if any growth.

The government is setting much store by an upturn in economic growth in the second half of this year and beyond to enable it to cut its general financial deficit to 3 per cent of GDP in 1997 in line with the Maastricht convergence criteria for monetary union.

Both Mr Juppé and President Jacques Chirac felt obliged to reiterate yesterday that the franc would participate in ERM from the scheduled start date in 1999.

Mr Chirac is to travel to Bonn on Sunday for the latest of his regular meetings with

Germany's chancellor Helmut Kohl. The Elysée last night described the get-together as a "regular consultation". It was "not at all" a crisis meeting.

With thousands of farmers blockading roads across France, Mr Marc Blondel, secretary-general of the Force Ouvrière trade union, sought to keep up the pressure on ministers, saying the current situation in France was "fairly comparable to 1995".

The gloom was further underlined by a survey for the weekly magazine Le Point, which found that 77 per cent of voters thought the economy was deteriorating, with 62 per cent believing it would continue to do so.

Nearly seven out of 10 thought unemployment would worsen, with the same proportion expecting a wave of strikes similar to the one that all but paralysed the country in November and December 1995.

Russian gem sales agency disbanded

Continued from Page 1

diamond industry in Russia."

He also insisted that the shutdown would not affect the protracted negotiations for a new contract between Russia and the international producers cartel organised by De Beers of South Africa. Komdragmet's responsibilities would be transferred to the finance ministry and the newly formed ministry of industry, Mr Kotlyar said, but it was not yet clear how the

new system would work. Officials at the finance ministry and Mr Viktor Grytsalev, former deputy head of Komdragmet who is to supervise the dismantling of the agency, refused to comment.

Mr Kotlyar said only Mr Boris Yeltsin, the Russian president whose August 14 decree dissolved Komdragmet, could explain why the decision had been taken. He said one motive may have been to enhance the authority of the finance ministry, now headed

by the president's former top economic adviser, Mr Alexander Livshits.

The former Komdragmet boss said the move might eventually cut red tape by bringing the management of gemstones and precious metals under the aegis of the finance ministry, which would inevitably be teething problems with the transition, which awkwardly coincided with peak activity in Russia's seasonal gold mining industry, he said.

FT WEATHER GUIDE Europe today Five-day forecast TODAY'S TEMPERATURES

Luxury to the LEBANON THE MOST FREQUENT SERVICE IN THE SKY British Mediterranean Airways fly direct to Beirut from Heathrow more often than any other airline.

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Friday August 30 1996

LEGAL DEFINITIONS flotation n. 1 launching of a commercial enterprise on the Stock Exchange

IN BRIEF

Disney and Kirch sign 10-year deal

Germany's aggressive Kirch media group and Walt Disney, the US entertainment group, announced an exclusive 10-year deal...

Marketing costs hit Tote Denmark

An increase of DKr524m in marketing costs for cellular phones was blamed by Tele Danmark...

Hambros seeks Regent Pacific meeting

Hambros, the UK merchant banking group, wrote to its new shareholder, Regent Pacific, inviting the Hong Kong based investment group to a meeting...

DAF downgrades full-year forecast

DAF Trucks, the Dutch-Belgian truck producer, reported an 11 per cent increase in first-half net profits...

Repsol blames fall on chemicals

Repsol, the Spanish oil and gas group, blamed a cyclical downturn in chemicals for a first-half decline in attributable net profits...

Falling margins hold back Thai banks

Three of Thailand's leading banks - Siam Commercial Bank, Bank of Ayudhya and Bangkok Bank - reported profit growth for the first half which fell short of expectations...

De Beers blamed for Indian turmoil

Blame for the turmoil in the Indian diamond cutting industry lay with De Beers and its Central Selling Organisation, which is responsible for the international rough (or uncut) diamond cartel...

Companies in this issue

Table listing companies and their share prices, including A.P. Moller, American Airlines, Anglo American, etc.

Market Statistics

Table showing market statistics for FT-SE 100, Dow Jones, Nikkei, etc.

Share price changes yesterday

Table showing share price changes for various companies like Alcatel, Agip, Amgen, etc.

Daimler hints at management shake-up

By Wolfgang Münchau in London

Mr Jürgen Schrempp, chairman of Daimler-Benz, yesterday hinted that he was considering an organisational and management reshuffle...

ahead of expectations because of a large tax credit.

In the past few days both Mr Schrempp and Mr Helmut Werner, chairman of Mercedes-Benz, the car and truck maker, have suggested it was inconceivable for Daimler's structure to remain unchanged.

Andi, the Volkswagen unit, announced a 57.6 per cent rise in first-half pre-tax profits to DM405m.

Production rose 8.3 per cent to 238,196 cars, while customer deliveries climbed 6.3 per cent to 246,597 cars.

problems left to sort out, such as the west European truck business, MTU [the aero-engine group], and Temic [the microelectronics unit].

Mr Herbert Demel, Audi chairman, said Audi was "making quick progress towards globalisation. In the first half, we sold cars in 105 countries. A year ago, this was only 90."

last year, to DM677m this year. Mercedes-Benz has remained the most profitable unit, contributing DML41bn to operating profits, against DML37bn.

Mercedes this week started what it considers a critical initiative to restore the profitability of its west European truck operations with the launch of the Actros heavy-duty model.

Hasty exit for Novell chairman

By Tom Foremski in San Francisco

Novell, the leading network software group, announced yesterday the surprise resignation of Mr Robert Frankenberg, its chairman, president and chief executive.

He was appointed almost 2 1/2 years ago and presided over the divestiture of the company's Unix and business applications groups.

The company said it had begun a search for a chief executive and that Novell board member Mr John Young had been appointed chairman.

Novell's board is understood to have been seeking a more "aggressive" chief executive for some time. Since the beginning of this year it has taken a more direct role in running the company, helping Mr Frankenberg to craft a busi-

Hotel groups reunite Hilton brand

By Scheherazade Daneshkhlu, Leisure Industries Correspondent

Hilton Hotels Corporation of the US and Ladbroke, the UK group that owns the Hilton name outside the US, have agreed an alliance that reunites the Hilton brand worldwide.

The two companies have agreed to market and develop Hilton jointly worldwide to cover the 400 Hilton hotels in 49 countries.

HHC will also take a 5 per cent stake in Ladbroke, and the two sides have the right to buy into each other's companies up to a 20 per cent maximum.



Peter George (centre), head of Ladbroke, and HHC's Stephen Bollenbach in London yesterday

Hilton International's hotels and a jointly-owned company will cover sales and marketing and develop a single logo.



Photo: Ashley Jernwood

Mr Stephen Bollenbach, the US company's chief executive, will sit on Ladbroke's board while Mr Peter George, Ladbroke's chief executive, is to join the HHC board.



Photo: Ashley Jernwood

Hilton now has the opportunity to participate in HHC's gaming operations in the US and elsewhere. Ladbroke has been trying to expand its gaming interests in the US.



Photo: Ashley Jernwood

Ladbroke is to increase its hotel investment and intends to free up resources by accelerating the sale of the remaining \$250m tied up in property assets.

Olivetti holds surprise meeting with investors

By Alan Cane in London

Shareholders representing about 25 per cent of Olivetti's stock forced an unprecedented meeting in London this week ostensibly to break down communication barriers between themselves and the loss-making Italian information technology and telecommunications group.

While those at this week's meeting played down any suggestion of confrontation or threats to the position of Mr Carlo de Benedetti, chairman and architect of the modern Olivetti, the meeting underlines shareholders' anxieties about the future of the company which has lost L3,900bn (\$2.6bn) since 1990.

The shareholders, including Baring Asset Management, Singer & Friedlander Investment Management and Nomura Capital Management,

were principally concerned about Olivetti's reluctance to engage in consultation and communication with its investors.

A broad range of issues were discussed but no votes were taken nor ultimatums put to the company, investors said. Olivetti said the meeting was "part of the normal practice of running a public company".



Robert Frankenberg, moved quickly to focus the group

ness strategy that would move it forward.

Mr Frankenberg's departure comes as Novell faces increasing competition from developers in the Internet and intranet markets, and from Microsoft, which is aggressively selling its Windows NT operating system that competes with Novell's Netware operating system on networks.

"I'm surprised by Frankenberg's resignation. It comes just as Novell seems to have got its act together and found some focus. This will create a lot of turmoil. It will generate fear, uncertainty and doubt within its customer base, its resellers, and application developers. Novell needs the application developers to create software for its products."

Over the last year, Novell sold its Unix business and most of its business applications from its \$1.4bn acquisition of the WordPerfect software group in 1994.

Novell continues to hold the leading market share for network software with its Netware product line, which has about 60 per cent of the market. It recently introduced a line of software products to take advantage of business opportunities in the intranet market.

SCA slides in first half and warns for year

By Hugh Carnegie in Stockholm

Sweden's SCA yesterday became the latest pulp and paper group to report a big drop in profits in the first half of the year and warned that the trend of falling earnings was unlikely to turn around before the final quarter.

SCA, which earlier this week retreated from the French disposable baby nappy market to stem losses there, said group profits after financial items fell to SKr1.67bn (\$252m) in the first six months from SKr2.95bn last year. Net earnings per share fell from SKr9.59 to SKr5.08.

The decline continued in the second quarter when profits slumped from SKr1.43bn at the same stage last year to SKr659m.

First-half earnings were hit by negative currency effects to a total of SKr260m. But the chief culprit was the big fall in prices which has hit the sector, notably for pulp, fine papers, magazine papers and liner products. In the second quarter alone, the gross impact of lower prices was SKr350m, although about 70 per cent was offset by lower raw material prices.

below most analysts' expectations and SCA's most-traded B-share ended the day down SKr1.50 at SKr143.

Mr Sverker Martin-Lof, SCA chief executive, said prices appeared to have bottomed out for most products, but the effects had not yet been felt. "This means the third quarter will probably be the year's weakest," he said. "How the fourth quarter will be hard to say, it depends on how quick the turnaround is."

The first-half result was

To Shareholders of Lonrho Plc

PRINCESS/METROPOLE FLOAT BY LONRHO Plc

It's time for yet another EGM at Lonrho.

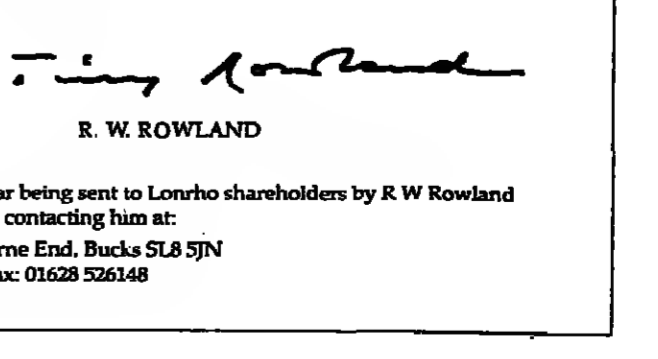
If you've got nothing better to do, why not read my circular?

If you have got something better to do, then leave it all to the management who brought you the Lonrho Platinum/Impala merger. Remember that?

Richard Rowland

R. W. ROWLAND

Copies of the circular being sent to Lonrho shareholders by R W Rowland may be obtained by contacting him at: Hedsor Wharf, Bourne End, Bucks SL8 5JN



New York and Toronto prices at 12.35pm

COMPANIES AND FINANCE: EUROPE

Marketing costs hurt Tele Danmark

By Hilary Barnes in Copenhagen

First-half profits at Tele Danmark, the partly-private telecoms operator, slid 24 per cent from Dkr1.75bn last year to Dkr1.34bn (€324m), with earnings per share falling from Dkr13.42 to Dkr10.33.

report "satisfactory" operating profit for the full year. The net profit for the year, however, will be lower than 1995's Dkr3.49bn, as net financial income is not expected to reach last year's exceptional Dkr1.1bn.

Mr Gregers Mogensen, international manager, said only one other European company, Spain's Telefonica, has a higher share of foreign turnover.

770,000 in the number of subscribers to Tele Danmark's cellular service in the 12 months to June 30. Transmissions rose 28 per cent in terms of minutes used.

employees fell from 17,332 in 1992 to 16,498 by June 30, but the latter figure showed a small increase compared with June 30 last year.

DAF Trucks ahead but downbeat

By David Brown in Amsterdam

DAF Trucks, the Dutch-Belgian truck producer, yesterday reported a 10.7 per cent increase in first-half net profits, to Fl 90m (€48.3m), but downgraded an earlier forecast of higher sales and net earnings for the full year.

NEWS DIGEST Maersk Line lifts AP Moller in term

A strong performance by the Maersk Line global container shipping services improved first-half operating profits at A.P. Moller, which has shipping and oil and gas interests. Maersk Line, the world's leading container carrier, reported a significant increase in its container division, which has also benefited from close co-operation with Sea-Land Service, the US shipping group.

Russian telecom group posts first profit

By Alan Cane

PLD Telekom, a telecommunications group quoted on the Nasdaq and Toronto stock exchanges and operating exclusively in Russia and Kazakhstan, made an operating profit of \$37,000 in the first half of 1996.

formation in 1995. Financing and amortisation charges resulted in a net first-half loss of \$2.8m, unchanged from the deficit recorded in the same period last year.

in the group's market areas was leading to increased demand for telecommunications services. "We continue to focus on the underdeveloped long-distance market," he said.

PLD operates PeterStar, a digital fibre optic network in St Petersburg. BEET International, a cellular telephone company in Kazakhstan, and the Moscow-based Technocom/Teleport, which provides dedicated international long-distance services.

Hapoalim posts profit down 5.2% in first half

By Hana Prusner in Jerusalem

Bank Hapoalim, Israel's largest financial group, yesterday reported net profits down 5.2 per cent in the first half of 1996, from \$134.3m in the first half of last year to \$127.3m.

Blocking up exits in the cradle of double entry

Fresh ground will be broken tomorrow in the birthplace of double-entry bookkeeping when the Italian arm of accountants Coopers & Lybrand completes its first year as a joint stock company.

vage plan at the end of July, after losses of L5,200bn (€2.12bn) last year and L1,100bn in 1994, they decided to seek damages from Price Waterhouse, the bank's auditors until 1994.

three years with accounts that have left shareholders wondering what has been going on. Last autumn's ructions at Gemina were not the end; in June, Reconta Ernst & Young, Coopers & Lybrand's successors as independent auditors, had to issue a modification to their earlier certification, reporting increased losses.

Percentage of audit hours table with columns for Position and Hours. Rows include Partner (4-7), Manager (14-17), Senior (25-29), and Assistant (41-57).

Share Capital (Lbn) table with columns for Firm and Share Capital. Rows include KPMG (8.9), Coopers & Lybrand (4.3), Arthur Andersen (3.0), and Reconta Ernst & Young (1.6).

principles and agree with records. However, many accountants privately admit that there is also a question about the quality of audit work after a savage fee war.

Bank Hapoalim shares fell 0.50 per cent in trading on the Tel Aviv Stock Exchange.

Earlier this year Consob, the companies and stock market regulator, revoked Coopers & Lybrand's three-year appointment as auditors of Gemina, the Milan conglomerate that reported surprise heavy losses last autumn.

Part of the problem is that Italians expect auditors to sniff out cooked books, although accountants insist their job is more modest, just checking that financial statements are drawn up in accordance with accounting

Principles and agree with records. However, many accountants privately admit that there is also a question about the quality of audit work after a savage fee war.

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Chemicals take blame for Repsol setback

By David White in Madrid

Repsol, the Spanish oil and gas group, blamed a cyclical downturn in chemicals for balking its profit growth in the first half of the year.

is contemplating selling its remaining 10 per cent shareholding in the group, which is now mainly in private hands. Under the terms of the last privatisation operation earlier this year, a new public offering is ruled out before next February, however.

Repsol shares closed Pta25 higher in Madrid at Pta1,110 yesterday, beating a generally lower trend.

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Heineken aims to refresh parts of Slovakian brewer

Dutch controller has provided technology and marketing

East of Bratislava and south of the Danube lies Slovakia's agricultural heartland, where prairie-flat fields of corn stretch for miles. It is also home to an intriguing foreign investment - Heineken's purchase of a controlling 66 per cent stake in Zlatý Bažant, the biggest Slovak brewery.

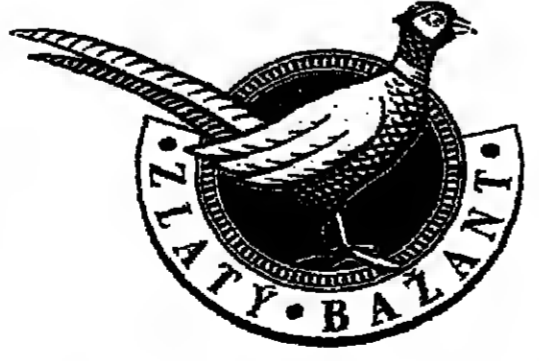
Mr Bolland says, "We can bring Heineken technology to give [the beer] a consistently high quality. We also bring added value in sales and marketing."

streamlining production, developing the brand name at home and abroad, and turning it around financially. "It was not a profitable brewery when we bought it and we're trying to make it profitable as quickly as possible," Mr Bolland says.

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Golden pheasant set to be introduced to Central Europe

Corporacion Mapfre rises

Corporacion Mapfre, the listed holding company of the Spanish insurance group, reported a 5.4 per cent increase in the first six months to Pta7,200m (€88.3m), with a 14 per cent increase in premiums to Pta1,700m. However, extraordinary earnings from a share offering in the group's life assurance arm in the first half of last year meant overall pre-tax profits were 26.5 per cent lower at Pta5,400m.

Investment income helps Codan

Codan, the Danish insurance company controlled by the UK's Sun Alliance, reported a sharp increase in group first-half net profits from Dkr87m to Dkr157m (€97.6m), on equity increased from 3.7 per cent to 29.9 per cent. The earnings were chiefly owing to an increase in insurance division, which increased from Dkr120m last year to Dkr372m.

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سكرا من الامن

COMPANIES AND FINANCE: ASIA-PACIFIC/THE AMERICAS

Kirch signs 10-year Disney TV deal

By Christopher Parkes in Los Angeles
An exclusive 10-year deal with Walt Disney will provide a further link in a newly forged chain of programming agreements between Germany's Kirch media group and US film and television studios.

The duration and nature of the pact - which includes German pay-TV rights to Disney live action films, and a tailor-made version of the premium Disney Channel - suggests that revenues for the US group may exceed the \$2.5bn MCA expects to garner from two recent deals in Germany.

Expansion in Europe's biggest and richest market marks a substantial advance for the Disney Channel, a family-oriented service being used to spearhead a group marketing campaign to sell everything from cinema tickets to stuffed toys.

The deal "rounds out our presence in the German TV market," said Mr Etienne de Villiers, president of Disney/ABC International.

Existing links, unaffected by the new contract, include Disney's half-share in Super RTL, a 50 per cent stake in programme producer and distributor Tele-München, and smaller holdings in RTL2 and TM3, a cable service aimed at women.

Thai banks suffer from falling margins

By Ted Bardacke in Bangkok
Some of Thailand's leading banks yesterday reported slower-than-expected profit growth for the first half of 1996. Even banks whose loan growth was stronger than average saw margins cut as a result of increased funding costs.

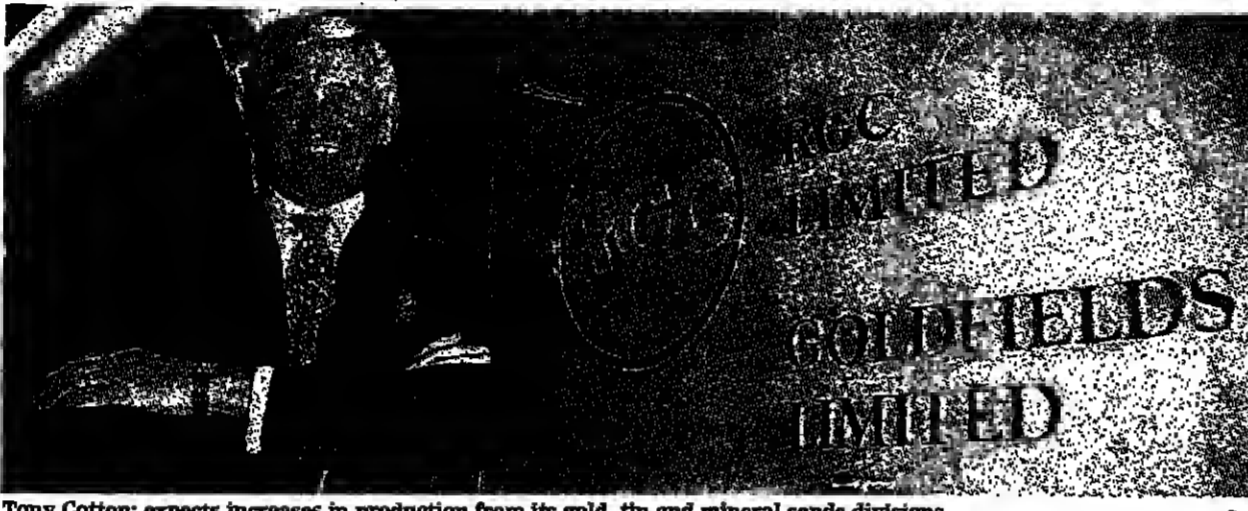
NEWS DIGEST

Astra held back by 'national' car

Astra International, Indonesia's largest car manufacturer, yesterday reported that net income for the first half of this year as car sales dipped ahead of the arrival of Indonesia's new "national" car. Astra, which is Indonesia's sole distributor for Toyota, BMW, Daihatsu, Isuzu, Peugeot and Fiat, reported net income up slightly to Rp182.83bn (\$78m) from Rp181.04bn for the same period last year. Car sales dropped 21 per cent to 76,441 units, in line with a 15 per cent decline in domestic demand for all makes, to 152,753 units.

Renison profits rise sharply to A\$76.5m

By Nikki Tait in Sydney
Renison Gold Fields, the Australian mining group which is 40 per cent owned by the UK's Hanson group, yesterday reported a sharp rise in after-tax profits for the year to end-June, at A\$76.5m (US\$60.4m), compared with last time's A\$52.9m.



Tony Cotton: expects increases in production from its gold, tin and mineral sands divisions

But the company said the overall result was helped by an increased contribution from the mineral sands division, which made A\$8.3m, up from last time's A\$4.5m. There was a reduced loss from Renison Tin - at A\$932,000, compared with A\$5.66m previously - while the Koba Tin unit made A\$3.65m (A\$4.71m).

In the current year, Mr Tony Cotton, chairman, indicated that the group expected increased production from its gold, tin, and mineral sands divisions. The last has been lifted recently by the acquisition of Cudgen, whose main asset is a 50.1 per cent controlling interest in Consolidated Rutile.

BHP, the Australian resources group, said yesterday Commonwealth Bank and Westpac had agreed to continue the current arrangements covering the redeemable preference shares in Beswick, which owns just over 17 per cent of BHP, for up to five years.

But higher funding costs reduced margins to 3.75 per cent from 4.25 per cent in 1995, according to unaudited results released by the bank.

Mr Olarn Chaipravat, Siam commercial president, recently said competition for wealthy private depositors - who account for about 60 per cent of the bank's total deposits - was getting so intense that the bank had resorted to offering free rides to the airport and buying spears in exclusive gold shops in order to keep customers.

Bank of Ayudhya, the country's fifth-largest bank, reported net profit in the first six months of 1996 up 4.2 per cent year-on-year at Bt2.46bn. A slowing economy held loan growth to about 17 per cent, while its net loan-to-deposit ratio fell nearly 5 percentage points to 104 per cent - below the industry average of 106 per cent.

National Grid in Malaysia

The Malaysian government has appointed National Grid Group, the UK power company, to investigate the operations of Tenaga Nasional, the Malaysian power utility. The examination will focus on how to avoid power cuts which have bedevilled Malaysia's grid for years. The most spectacular outage was on August 3, when the whole of peninsular Malaysia was without electricity for about 18 hours.

AGL cautioned yesterday that profits growth in the current year was unlikely to match that of 1995-96. However, he said the company was still looking at profit increases well in excess of inflation.

Westfield upbeat after rise
Westfield Holdings, the Australian property group which specialises in shopping centre developments, yesterday posted a A\$74.5m profit after tax in the year to end-June, up from A\$61.5m last time.

MMI on target
MMI, the Australian general insurer in which Germany's Allianz holds 16 per cent, yesterday announced an after-tax profit of A\$33.1m in the year to end-June, a 6 per cent increase on the A\$33.1m made in the previous 12 months.

Toronto Dominion flat
Canada's Toronto Dominion Bank posted flat third-quarter earnings, with narrower interest margins offsetting stronger growth in non-interest income. Net earnings dipped to C\$222m (US\$165.14m) in the three months to July 31 from C\$226m a year earlier. Per share income rose 70 cents from 70 cents. The bank recently unveiled plans to buy back 10 per cent of its shares.

Sale helps National Bank
National Bank, Canada's sixth largest, posted a 53 per cent gain in third-quarter earnings, to C\$97.5m (US\$71.4m), or 55 cents a share, from C\$64.1m, or 33 cents, a year earlier. The latest quarter included a C\$60m gain on disposal of shares in a Chilean bank, partly offset by a special provision for property losses. Together, they represented a gain of 14 cents a share.

Itaú awakens dozing Argentine banks

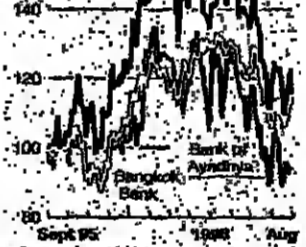
At the corner of the avenues Florida and Corrientes in downtown Buenos Aires, a brightly painted, two-storey high hoarding loudly proclaims: "At this bank, customers are treated well." It seems an awfully big sign for such a small claim.

Brazilian bank plans \$70m investment in Argentina's retail sector, says David Pilling
Percentage of GDP, is only 20 per cent. In Brazil, where Itaú is the second-largest private bank, financial penetration is 48 per cent.

Each branch has four tellers, against one in the typical Argentine branch. Local banks are often jammed with lines of people paying utility bills, because direct debits and cheques are not trusted by Argentines. Itaú ATMs are equipped to read the bar-codes on utility bills, automatically transferring funds from account to utility company. Telephone banking is encouraged.

What also distinguishes Itaú is its aggressive pursuit of middle and lower middle class clients. This is the C1, C2, C3 category sorely neglected by Argentine banks. "They're quite right to go for clients from these segments because this is where the bulk of growth will come from," says the local banker. "However, return on investment will be slow."

There was a similar story at Bangkok Bank, Thailand's largest, which earlier in the week posted first-half net profit of Bt10.54bn, up 6.8 per cent from the same period a year before.



Bank of Ayudhya, the country's fifth-largest bank, reported net profit in the first six months of 1996 up 4.2 per cent year-on-year at Bt2.46bn.

Telkom advances 45% on strong demand for lines

By Manuela Saragosa in Jakarta
Telkom, the Indonesian domestic telecommunications carrier, said net income in the first half rose 45 per cent as the company's number of lines in service continued to grow along with call volumes on its fixed-line network.

Meanwhile, the average pulse per line decreased 6.5 per cent but analysts say this was largely expected, given the dilution caused by the addition of new lines.

Operating revenues from those regions managed by Telkom totalled Rp1,283bn, while the five regions managed by private consortia contributed Rp663.8bn. There is no comparable figure for the same period last year because Indonesian accounting procedures require revenues from the private consortia to be reported on a net basis.

For the whole of 1996, however, the figure is slightly lower: Rp1,361bn compared with Telkom's earlier estimate of Rp1,215bn. This reflects the late start-up date for the consortium licensed to install and operate new lines in Kalimantan.

Operating new lines in the regions, a figure which is expected to appreciate by 34 per cent a year.

Technology paves way for PC-makers in workstations market

As PC technology grows more powerful, new applications are arising in the workstation market. The potential has been great enough to attract leading PC makers such as Compaq Computer, which has announced it will enter the workstation market by the end of this year.

Smaller companies may soon rival the likes of IBM in this field, reports Tom Foremski

Traditional workstation users might be able to save money buying NT/Pentium Pro workstations, but are unlikely to make the switch because of their large investments in software and training on Unix/Risc systems.

The traditional workstation companies are not sitting still. Hewlett-Packard, which held about 20 per cent of the workstation market in 1995, second behind Sun with 26 per cent, will introduce NT/Pentium Pro workstations by the end of August.

IBM and Digital are also expected to introduce NT/Pentium Pro workstations this year. But Sun and Silicon Graphics remain firmly committed to their Unix/Risc workstations.

Sun plans to stick with its Solaris Unix version and its Risc Sparc microprocessor-based workstations. "The impact on Sun will be negligible if at all. We're pure-play Sparc and Solaris, and lead the workstation market. Most at risk will be the second-tier players, like Silicon Graphics," said Mr Gene Banman, vice-president and general manager of Sun's desktop products business division.

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# The Stockholm Stock Exchange open One hour longer!

The Stockholm Stock Exchange is further improving its service to members and to investors in the U.S. and U.K. who trade in Swedish securities.

Effective Monday, September 2, the Exchange will be open for trading one hour longer - until 5:00 p.m. Stockholm time. Members of the Exchange and investors based in the U.K. will now be able to execute trades until 4:00 p.m. GMT. Investors in the U.S. will have access to the Exchange until 11:00 a.m. EDT.

At year-end 1995, Sweden was the sixth largest stock market for investments of American capital outside the U.S., much of which is placed via London firms. In the first quarter of 1996, only the U.K. and Japan attracted larger amounts.

Stockholm Stock Exchange's objective is to continue to be the most attractive and efficient marketplace for Swedish securities - and the leading stock exchange in Northern Europe.



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## COMPANIES AND FINANCE: UK

# Rolls-Royce plans to lift pay-outs

By Ross Tiernan

Rolls-Royce, the aero-engine maker, is set to rebuild dividend pay-outs after recording a strong improvement in underlying interim profits. Although the company recorded a pre-tax loss of £169m (£262m) during the half to June 30, after provisions for disposal of its steam power generation companies, operating profits from the ongoing business

rose by 50 per cent to £96m. The interim dividend was maintained at 3p. But Sir Ralph Robins, chairman, said "We shall get to the point where we can start restoring the dividend." Rolls' profit recovery has been held back by provisions of £263m for the sale, joint venture or closure of Parsons Power Generation Systems and International Combustion. The aerospace group

decided to quit construction of big power generation plants five weeks ago, believing it was too small to become a leading player. Sir Ralph said several expressions of interest had been received from potential buyers. During the first half, the businesses being sold lost £15m on sales of £387m. A nine-month overtime ban by Rolls' UK aerospace workers, which ended in

May, cut group first-half profits by £15m. The collapse of Fokker, the Dutch plane-maker that fitted Rolls' Tay engine to its 70-100 seat regional jets, cut profits by a further £5m, Sir Ralph said. But the company, engaged in a three-way battle with Pratt & Whitney and General Electric of the US to be the world's biggest jet engine maker, began to benefit from a recovery in the aviation industry.

The order book rose £500m to £7bn. Rolls announced yesterday that Kato Group of Egypt has placed 13 firm orders for RB211-535 engines to power Tupolev Tu-204 airliners. Mr Chris Avery, of Paris, is predicting full-year profits of £235m, with an unchanged final dividend of 3p. But he expects a 10 per cent dividend rise in 1997, when profits are expected to reach £275m.

# T&N looks for a partner

By Tim Burt

T&N, the specialist engineering group, yesterday raised the prospect of a wide-ranging international alliance or possible merger in a drive to become one of the world's leading suppliers of motor components. The company, which as Turner & Newall was one of Britain's largest suppliers of asbestos, said it wanted to double in size and would explore ways to do so - if it could cap its asbestos-related liabilities.



Sir Colin Hope, left, with Ian Much, chief executive designate

Sir Colin Hope, chairman, said that by the end of next year T&N could be in a position to "consider consolidating" with another components manufacturer. He hinted that the company might pursue a merger similar to the £3.2bn (£4.98bn) tie-up between Britain's Lucas Industries and Varta Corporation of the US.

"We would only move on something that promised industrial logic," he added. But T&N would not contemplate such a deal until it had completed its stalled acquisition of the German pistons manufacturer Kol-

benschmidt - the subject of an appeal to the German cartel authorities - and until it could see an end to its asbestos burden. The shares fell 9p to 135p

after it announced a sharp fall in first-half profits and admitted it might have to make a £50m provision to meet US personal injury claims this year.

# GEC to meet ABI over Simpson

By William Lewis

General Electric Company is on Monday to meet the Association of British Insurers, the leading institutional shareholder body, in an attempt to resolve the dispute over the remuneration package awarded to Mr George Simpson.

The highly unusual meeting will take place just four days before GEC's annual meeting on September 6. Several investors have said they are considering voting against the appointment of Mr Simpson at the meeting because of their concerns about his package. Shareholders complain that the largest GEC has to beat before Mr Simpson is able to profit from a proposed phantom share option scheme are not tough enough.

Mr Simpson, who takes over from Lord Weinstock as managing director next month, will receive up to £1m if GEC's share price outperforms the FTSE 100 index by 10 per cent over the previous six-month period. The ABI yesterday refused to comment, but a GEC adviser said that the association had asked for the meeting after "its members had inundated it with questions about Mr Simpson's deal".

# Cost cuts pay off at Ladbroke

By Scheherazade Daneshkhu

Hilton International and a recovery in betting helped push pre-tax profits at Ladbroke up 7.4 per cent to £64.2m at the halfway stage. This included an exceptional loss of £3.6m on commercial property sales and the £100m sale of the Langham Hilton in London. Turn-

over was down 7 per cent at £1.98bn. Mr Peter George, chief executive, said the results for the first half were "excellent" and attributed the rise in profits to new investment, cost reductions and betting deregulation. At Hilton International, underlying profits rose 23 per cent to £70m on turnover 5 per cent ahead at £914m.

However, pressure on room rates in continental Europe continued to act as a drag. Fixed-lease arrangements in some underperforming hotels pushed up costs and contributed to a 17 per cent fall in profits to £8.7m. Profits in the betting arm rose 17 per cent to £43.6m, although turnover fell by 4.4 per cent to £1.43bn. Lower overheads and substantial

betting on the European Football Championship had helped push up profits. Profits at Vernons, the pools company, rose to £3.4m (£3.7m), mainly due to reduced costs. Turnover fell sharply to £45m (£57.8m). Net debt was £1.02bn (£1.15bn), giving gearing of 4.7 per cent. Property sales since the period end further reduced debt to £875m.

U.S. \$200,000,000 Bergen Bank AS

U.S. \$600,000,000 Lloyds Bank Plc

U.S. \$400,000,000 Banque Francaise Du Commerce Exterieur

Crédit local de France GENERAL MEETING OF BONDHOLDERS

OMRON CORPORATION NOTICE TO HOLDERS OF BEARER DEPOSITARY RECEIPTS

Table with columns: Bid, Offer, Bid, Offer. Lists various financial data points.

U.S. \$300,000,000 Scotiabank THE BANK OF NOVA SCOTIA

U.S. \$125,000,000 BANK OF BOSTON CORPORATION

FUTURES & OPTIONS BERKELEY FUTURES LIMITED

The Chase Manhattan Corporation U.S. \$175,000,000

BANCO CENTRAL DE LA REPUBLICA DOMINICANA

First Bank System, Inc. US\$200,000,000

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سكيا من الاجل

صحة من الامل

COMPANIES AND FINANCE: UK

Restructuring programme helps Reckitt

By Christopher Price
Benefits of its disposals and acquisitions programme helped Reckitt & Colman...

Products, the US household goods group, last year, the company's disposal programme had raised a net £432m...



Alain Dalby, chairman: first fruits of transformation

Trading in emerging markets was mixed, with operating profits flat at \$68m. Brighter conditions in Asia, Brazil and Africa were offset by downturns in Australasia and Mexico.

ROLLS-ROYCE HALF YEAR RESULTS 1996

"These results show the underlying strength of our continuing businesses. Our decision to withdraw from large steam power generation recognises the need to focus upon those businesses where we have established or can establish leading market positions."

Sir Ralph Robins, Chairman

Table with 4 columns: Group Profit and Loss Account, Half year to 30 June 1996, Half year to 30 June 1995, Year to 31 December 1995. Rows include Turnover, Operating (loss)/profit, (Loss)/profit before tax, etc.

Operations to be discontinued consist of the large steam power generation business of the Industrial Power Group (Parsons Power Generation Systems and International Combustion). An exceptional item of £248m includes potential costs of closure, contract costs and attributable goodwill previously written off to reserves.



Rolls-Royce plc, 65 Buckingham Gate, London SW1E 6AT.

Two Wickes directors resign

By Ross Tienan
Two senior managers have resigned from Wickes, the DIY retailer which discovered two months ago that profits had been overstated by an estimated £30m (\$46.5m).

Both have since been assisting an inquiry by accountants Price Waterhouse and solicitors Linklaters & Paines into inaccuracies in Wickes' accounts.

Wickes said the delay would "allow sufficient time for Mr Rosenthal and Mr Miles to co-operate fully with Linklaters & Paines and Price Waterhouse in the final stages of their investigations."

as a result of incorrect timing of the recognition of profit in our accounts. The overstatements are believed to go back several years.

Regent invited to meet Hambros

By George Graham, Banking Correspondent
Hambros, the UK merchant banking group, wrote yesterday to its new shareholder, Regent Pacific, inviting the Hong Kong-based investment group to a meeting.

been "gratuitously rude" in describing Hambros' performance as "diabolical". Hambros is not the first institution to have discovered Regent Pacific as an annoying presence on its shareholder register.

Regent first tried for a stock market listing of its own in Hong Kong in 1992 but had to drop its plans. It is now aiming once again for a listing this autumn.

Hambros' decision last year to restructure its banking activities by cutting corporate lending and building up its advisory and fund management activities was welcomed by investors and analysts as going in the right direction - and echoes the advice proffered this week by Mr Mellon.

RESULTS table with columns: Company, Shares, Pre-tax profit, EPS, Dividends, etc. Lists various companies like Alliance, Agip, Baker Hughes, etc.

BANQUE NATIONALE DE PARIS advertisement for FRF 100,000,000 Floating Rate Notes due 2000.

COMMERZBANK advertisement for SUBSCRIPTION OFFER FOR PROFIT SHARING CERTIFICATES.

DAF Trucks N.V. advertisement for NLG 300,000,000 Medium Term Revolving Credit Facility.

CENTRALE NUCLEAIRE EUROPEENNE A NEUTRONES advertisement for FRF 100,000,000 Guaranteed Floating Rate Notes 1996.

Wells Fargo & Company advertisement for US\$200,000,000 Floating rate subordinated notes due 2000.

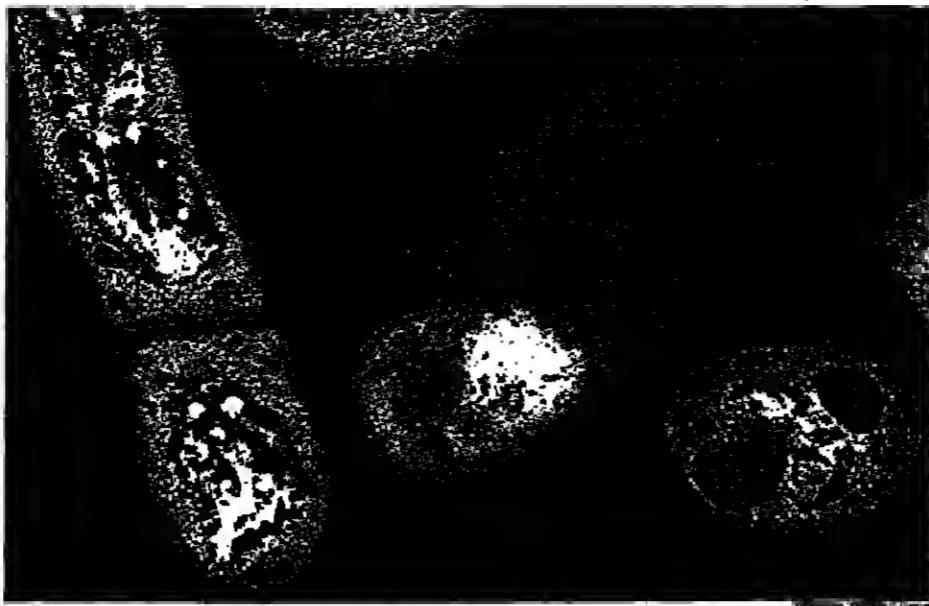
COMMERZBANK AG advertisement for Frankfurt/Main 30th August, 1996.

TECHNOLOGY

Virtual adverts become reality

The introduction of technology into the advertising industry has been piecemeal...

British biotechnology company has developed a new laboratory test for tuberculosis...



Mycobacterium tuberculosis: the bacteria are spread by coughing or sneezing and inhaled

A new diagnostic system could revolutionise tuberculosis detection, says Jill Graham Testing for TB

Stuart Wilson, then at the London School of Hygiene and Tropical Medicine and now at the Mycobacteria Research Unit of the Public Health Laboratory Service...

microbiological assay which can be performed by relatively unskilled personnel. The method is highly sensitive and a TB detection diagnosis can be made within 10 hours...

MANAGEMENT

John Kay Of fortunes and foresight



Competing for the future by Gary Hamel and CK Prahalad, has been one of the best-selling business books of the last two years...

Other companies on Hamel and Prahalad's list do not seem to have much to do with their argument either...

COMMERCIAL PROPERTY

Perth Airport. Total site area: 585 acres (237 hectares). Former international air training college with three runways, control tower, hangars, residential accommodation, lecture theatre, workshop, sports and recreational facilities.

DEPARTMENT OF EDUCATION FOR NORTHERN IRELAND MARKET SOUNDING STUDY. PROCUREMENT OF SERVICE CONTRACTS IN SCHOOLS UNDER THE PRIVATE FINANCE INITIATIVE.

COMMERCIAL PROPERTY COMPANIES SOUGHT. St. Modwen Properties PLC is actively engaged in a programme of acquiring existing commercial property investments.

UK Business Property. Always topical, sometimes controversial the editorial will provide an overview of the UK Commercial Property Market.

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BUSINESS FOR SALE. Tender for the sale of 70% of shares of RAS Eesti Merelaevandus (Estonian Shipping Company). Ship-owner, ship-operator. Turnover: approx. 49 million USD for half year of 1996.

WORLD TAX REPORT. World Tax Report enjoys an international reputation for being the first to report on all important changes in the many tax jurisdictions. Its network of international correspondents all work in the field, ensuring that the information it provides is comprehensive and highly practical.

Handwritten Arabic text: مكتبنا من الامم



RECRUITMENT

Robert Taylor looks at strategies for reducing physical assaults on employees

Firm response to violence at work

Violence in the workplace is an issue that is beginning to arouse deep and widespread concern among employees in the world's industrialised countries. As labour markets become more deregulated and flexible under competitive pressures, social stressors have increased. Factories and offices may not be battlegrounds but violence and threats of physical assault involving employees are on the increase.

The most common are attacks by non-employees against workers. Today's 24-hour stoppage by staff employed in Britain's state-run Benefits Agency reflects this anxiety. The protest is against the government's refusal to allow protective screens in open-plan job-centres to administer the new Jobseeker's Allowance which will replace unemployment benefit next month. Some of the agency's staff fear desperate clients in search of work will react aggressively to what they will see as a more coercive approach with a lower level of benefits.

While the UK labour market is seen by its enthusiasts

as highly adaptable to the ever-changing needs of employers and employees alike, there is evident unease about job insecurity, particularly among unskilled, untrained young men. This must give pause for thought about how some of them will react to the introduction of a tougher welfare-to-work regime in the employment services which is promised by both the government and the Labour party.

Perhaps there are lessons to learn from the handling of workplace violence in the US, where several massacres of employees have hit the headlines in the 1990s. In 1981 Thomas McIlvane, a sacked US postal service letter carrier in Royal Oak, Michigan, murdered four colleagues and wounded four others with a rifle.

Two years later eight people were gunned down in Pettit and Martin, a San Francisco law firm. Only a fortnight ago a student at

San Diego State University, 10 miles from the Republican Convention, murdered three professors who were examining him on his thesis.

These were unfortunately not isolated incidents. The US Society for Human Resource Management pointed out recently that nearly half of human resource professionals reported one or more violent incidents in their workplaces since January 1 1994.

Forty per cent of respondents mentioned threats of violence by employees, 22 per cent reported pushing or shoving and 13 per cent fist-fights. Men committed 77 per cent of the incidents - and provided 53 per cent of the victims.

Only 1 per cent of the incidents involved shootings, rapes, sexual assaults or stabbings. "It is true fatalities are still relatively rare as a result of workplace violence," says Ms Tina Schneider Deneberg from Work-

place Solutions. This is a new organisation formed with support from Cornell University and the William and Flora Hewlett Foundation which is designed to help companies devise violence prevention programmes.

She adds: They are the tip of the iceberg. In many workplaces resentment and aggression routinely displace co-operation and communication. Hostility surfaces as threats, intimidation, harassment, talking and sub-lethal assault.

Today's changing workplace is seen as the particular focus for employee aggression in the US. New forms of teamworking as well as mandatory overtime, more shift-working and fatiguing production targets are blamed for the intensification of pressure on employees already under stress.

Moreover, as Ms Deneberg points out, American

workers are more vulnerable than their colleagues in the UK and in European social market economies because they lack welfare state protection.

Other causes of workplace violence include authoritarian management styles, family breakdown and drug and alcohol abuse. The use of electronic surveillance and computerised monitoring by companies of their employees' individual performances can also add to a sense of angst.

As in the UK, workplace violence in the US is particularly apparent by customers against service workers, with the most vulnerable being those employed in healthcare and social work. A 1994 US study found nearly two-thirds of non-fatal assaults against staff took place in nursing homes, hospitals and

residential care centres.

The federal government's Occupational Safety and Health Administration (Osha) has recently published voluntary guidelines to assist vulnerable workers on how to prepare to deal with such violence which have wider application. Workplace Solutions is also developing a strategy for management and employee awareness designed to stimulate awareness of the problem and suggesting ways to prevent it.

"We have to make organisations crisis-prepared, not crisis-prone," says Mr Mark Braverman from Crisis Management Group, which designs and implements violence prevention strategies. What seems to be vital is to combine a management commitment to a violence prevention programme with active worker involvement in implementing it.

"Preparing employees to handle violent incidents

should be as commonplace as fire drills in workplaces," says Ms Deneberg of Workplace Solutions. Companies are encouraged to create organisational risk audits as well as grievance and dispute resolution procedures and training programmes.

The Osha guide emphasises the need for a written code of prevention as well as the introduction of staff screening surveys, workplace security and evaluation analyses and safety devices in the workplace to make employees secure.

Treating workplace violence as another occupational safety and health hazard is likely to be more successful - the American experience suggests - if employees, management and trade unions work together. The creation of joint company labour-management committees are being encouraged to take the initiative.

But employers and work-

ers have a long way to go in recognising and responding to the dangers of workplace violence. A recent survey by the American Management Association found 65 per cent of companies have no policies to deal with actual or potential violence inside or outside their workplaces. Most see the best answer to such problems as firing difficult individuals or imposing disciplinary procedures without co-operation.

Clearly there is a danger in the adoption by employers of over-intrusive methods. "Workplace violence should not become an excuse for witch-hunting," warns Mr Braverman. Preventative measures must be administered with sensitivity and understanding.

Yet as those who grapple with the growing workplace violence problem recognise, the US has an unenviable reputation as a "gunfighter nation" that goes back to its origins. Any comprehensive strategy would involve going far beyond the workplace to introduce measures to reduce and contain the violence that is endemic in American society - and there are precious few signs of that happening.

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Interested individuals will send a Curriculum Vitae, in English, to our advising Consultant Mr Kean August, quoting reference FT0083, on (Fax) +44 171 209 0001, or by post to FSS Europe, Charlotte House, 14 Windmill Street, London W1P 2DY, UK. Telephone +44 171 209 1000 for a confidential discussion.

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 2 London Wall Buildings, London Wall, London EC2M 5PP  
 Tel: 0171-588 3588 or 0171-588 3576  
 Fax No: 0171-256 8501

**ALPS GROUP ACCOUNTANT**  
 £45,000-£60,000 + BONUS  
 CITY OF LONDON

**MEDIUM-SIZED U.K. GENERAL INSURANCE COMPANY: SUBSIDIARY OF MAJOR MULTINATIONAL**

Our client is a UK subsidiary of a recognised world leader within the financial services sector and a long-established, principal and innovative force in the insurance markets. The Group Accountant reports to the Finance Director and is responsible for statutory reporting, exercising control over a balance sheet of £1,000m and managing a department of over 30 people. The group has undergone considerable change to take advantage of the dynamic situation in the UK insurance industry and the Accounts function has progressed accordingly. The successful applicant will continue this change process including the upgrade of systems and the motivation and development of staff, to ensure the company maintains its top-quartile position into the next millennium. We invite applications from qualified Chartered Accountants with 10 years' experience in the general insurance and/or London market, gained with a company or as a specialist in the profession. The successful applicant is likely to be an experienced manager skilled in the effective management of resources, with excellent communication skills and the ability to initiate change. He or she will also have the potential for promotion to the position of Finance Director in several years' time. Initial remuneration, within a range of £45,000 - £60,000 plus excellent bonus and benefits package. Applications in strict confidence under reference GAI 5713/FT to the Managing Director, ALPS.

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**CJRA SENIOR BRANCH ACCOUNTANT**  
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Excellent career prospects in this challenging role within expanding international bank

We seek applications from accountants with at least 5 years' post-qualification experience in bank accounting with a sound knowledge of treasury products including derivatives used in both trading and hedging as well as the establishment of risk and reporting systems. Reporting to the Chief Accountant, and assisted by a small team, the successful candidate will assume overall responsibility for the accounting function, including regulatory and Head Office reporting and taxation. Computer literacy is essential with knowledge of Internet Atlas being an advantage. We seek an energetic, positive and proactive individual with the flexibility to thrive in a small team. Initial remuneration negotiable including banking benefits.

Applications in strict confidence quoting reference SBA5712/FT will be forwarded to our client unless you list companies to which they should not be sent in a covering letter marked to the attention of the Security Manager, CJRA.

**BUSINESS AUDITOR**  
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 Our client, Coca-Cola Middle East is a major division of The Coca-Cola Company established 110 years ago and now the world's most powerful trademark and only truly global soft drinks production and distribution system.

**THE OPPORTUNITY**  
 An excellent opportunity exists for a highly motivated and enthusiastic finance professional to take up this key management position. You will be responsible for carrying out internal audit programmes and ensuring that adequate internal controls exist within Coca-Cola Middle East's four Regional Management functions and the Bottlers that those functions are responsible for, across nineteen countries. The role will include assisting locations to correct internal control weaknesses identified by the Corporate Audit function as well as special project work as required from time to time.

**THE CANDIDATE**  
 Ideally the successful candidate will be a qualified accountant/auditor, MBA or passed finalist, have at least two to three years audit experience and be able to demonstrate a positive record of achievement. Fluency in Arabic and/or French and experience of the Middle East, although not essential would certainly enhance a candidate's suitability.

Interested candidates should in the first instance send their CV together with details of their current salary, work and home telephone numbers to Jeff Price at ABPM, Redridge House, 9 Balley Lane, Sheffield S1 4EG. Tel: 0114-278 0011. Fax: 0114-273 8384. Please quote reference - CC12.

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**FINANCIAL ACCOUNTANT**  
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This is an outstanding opportunity for an ambitious and highly motivated Qualified Accountant, reporting directly to the Managing Director and the European Board. In the first instance please send a full Curriculum Vitae stating your current remunerative package to:

M J Dobbin, Pridie Brewster, Chartered Accountants, Carolyn House, 29-31 Greville Street, London EC1N 8RB

**CHIEF ACCOUNTANT**  
 The Salvation Army  
 London  
 c.£35,000 plus benefits

The Salvation Army is engaging in a major project to improve its management information and update its financial systems and procedures. In conjunction with this the Army is also seeking to strengthen its Headquarters Finance team in London by recruiting a qualified accountant to the newly created position of Chief Accountant.

Responsible to the Managing Director through the Finance Director, the Chief Accountant will be a key person in the implementation of new systems and procedures and will have long term responsibility for the ongoing development of the Army's financial information systems. They will also have responsibility for Headquarters accounting staff.

The successful candidate will be a qualified accountant with solid experience of running a large accounts department, management information and accounting systems. Experience with a major national charity and knowledge of charity legislation and reporting requirements would be an advantage. Sympathy with the aims and objectives of the Salvation Army will also be required.

Please write with full career details, current salary and a covering letter explaining your reasons for applying and why you are right for this post to:

Kevin Miller  
 Clark Whitehall Consultants  
 25 New Street Square, London EC4A 3LN  
 Closing date for applications is 16 September 1996

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**SENIOR IT PROFESSIONAL**  
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We have been retained by a major international investment bank to identify a senior IT professional for its merchant banking division.

This is a new role which encompasses the following responsibilities:

- Developing and maintaining a rolling 5 year IT plan in conjunction with business strategy.
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- Promoting innovative use of new technology.
- Identifying opportunities for market differentiation and cost reduction.

The successful candidate must have a degree in Finance/Banking and in excess of 10 years IT experience in a major blue-chip financial services environment. This experience must include managing large scale projects; systems integration; the development of both technical architecture and technical infrastructure and developing appropriate financial control procedures in Commercial or Investment Banking particularly in the Sales and Marketing environment.

The person appointed will have superior interpersonal skills and credibility in order to be able to forge strong relationships with the business.

The remuneration package is designed to attract a candidate of the highest calibre.

To apply, you must send a copy of your CV to Derek Wreay at The Wreay Partnership, who is managing this assignment.

**THE WREAY PARTNERSHIP**  
 150 Regent Street, London W1R 5FA  
 Fax: 0171 494 3634

**Senior Project Management**

Our client's product, a realtime integrated trading and settlements system, has been successfully implemented in some of the leading banks within the City stimulating a dramatic increase in orders from other institutions world-wide. To accommodate the increased business levels and to facilitate the additional expansion our client is actively looking to resource the following key roles as phase one of a major recruitment drive.

Responsible for the smooth running of several high profile multi-million pound projects, this role demands a mature and proactive approach. This is a business focused role requiring a high degree of client management and a proven ability to manage multi tasking teams. You will be an astute people manager with outstanding communication skills, able to establish a credible presence at board level and hold an impressive record in solution delivery. It is expected your career will span a minimum of 10 years with some time spent working with a major consultancy.

With a track record of delivering major projects, successful applicants will take responsibility for high profile projects involving package implementation, bespoke development and business consultancy. Systems house experience would be advantageous, preferably involving package solutions in a banking environment, however selection will be based upon overall profile and previous track record of delivering projects on time and within budget. Although not essential, a good understanding of relational databases and client server technologies would be beneficial.

They are looking for the very best people to spearhead the next phase of their development. If you feel you are up to the challenge then contact Bill Graham on 0171 419 2517 (24 hours) or write enclosing a full cv quoting ref: B996 to Prime Selection, Prime House, 136 Krutsh Town Road, London NW1 9QB. Fax: 0171 813 6574.

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**AIX System Administrator**

AIX System Administrator needed for support and implementation of new systems. The successful candidate must be self-motivated and quick-thinking, with a methodical approach to projects and problem solving.

Experience in one or more of the following areas would be an advantage:  
 HACMP, TCP/IP, NFS, NIS, DNS, Oracle, Sybase, DB2/6000, web-based applications, and/or shell script writing.

Reply with current CV to:  
 Stephan Conaway  
 Director, Computer Services  
 Financial Times Ltd.,  
 One Southwark Bridge,  
 London SE1 9HL

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 Emma Lloyd +44 171 873 3779  
 Dominic Knowlson +44 171 873 4015

INTERNATIONAL CAPITAL MARKETS

Growth data surprise drives down Treasuries

By Lisa Branstetter in New York and Samar Iskandar in London

A surprisingly strong figure on US economic growth in the second quarter sent Treasury prices sharply lower in early trading yesterday. The yield on the benchmark 30-year Treasury rose above 7 per cent for the first time since late July.

guard by a large upward revision in the estimate of second-quarter gross domestic product growth. Originally reported as 4.2 per cent, the Commerce department said yesterday that growth was 4.8 per cent last quarter. Generally, such revisions are small and economists had forecast that GDP growth would not change from the earlier estimate.

increase after weak employment figures were released at the beginning of this month.

Mr Kevin Studer, a senior fixed-income trader at First Chicago Securities, said yesterday's strong data added

GOVERNMENT BONDS

importance to the jobs figures due out at the end of next week. "If we get a good solid jobs number, then people might start putting [a September rate increase] back on the table."

Today's release of figures on factory orders will also be carefully watched by investors for hints of inflationary pressures.

European bonds initially dipped in the wake of falling Treasuries, but later recovered to close slightly higher.

French bonds proved resilient, despite renewed pressure on the franc from looming social unrest. Official confirmation that the social security deficit would reach FF750bn-FF755bn by year-end, against an initial government forecast of around FF170bn, did little to support the market. However, traders reported intervention by the central bank as soon as the franc threatened to fall below FF13.43 against the D-Mark.

The Matif's September national future settled at 129.10, up 0.14, while in the cash market the 10-year yield spread over bonds

closed unchanged at 6 basis points.

Although the threat of strikes by public sector unions is likely to continue to weigh on the French market, analysts cited two supporting factors for the franc and OATs.

The first is that speculation against the currency has so far been with thin volumes. "This suggests that the Banque de France could be quite successful in stopping the slide going too far," said economists at Bear Stearns in London.

The second is what some described as the absence of agreement among the unions, which could undermine the effects of protests planned next month. "They [the unions] are not yet sure

whether they want to act in concert or separately," said one independent observer.

"Some of them are not even sure they want to participate in any demonstrations."

Spanish bonds outperformed other markets, on signs that the Catalans have agreed with the government on the thrust of the forthcoming budget. The September future on 10-year bonds rose 0.35 to close at 101.00, in the cash market, the 10-year yield spread over bonds tightened by 5 basis points to 245.

Bonds were also supported by the postea's recovery on the foreign exchange market, as the D-Mark weakened against the dollar and other European currencies.

Regent Ukraine Fund launched

By Richard Lapper

Regent Pacific, the Hong Kong-based fund management group, is poised to launch another investment trust dedicated to the emerging markets of the former Soviet Union.

Regent manages four investment trusts with a total of some \$345m invested in the region's equity markets. A fifth fund, which has invested a further \$100m in Russian debt markets, was launched this summer.

mer Soviet Far East, central Asian and Baltic states, respectively, while the Yellow Tiger Fund invests in low Russian stocks but is targeted at investors in South Korea. In practice, however, all the funds have invested heavily in Russian blue chip companies. The funds, launched since September 1994, have shown returns of between 50 and 150 per cent. Mr Mello said the capitalisation of the Ukrainian market was modest, at about \$1bn. However, there was growth potential given the introduction of tighter monetary policy and the expected completion by year-end of an ambitious privatisation programme. Only four companies are listed on the country's stock exchange, with another 100 or so traded over the counter.

Retail investors offered wide variety of issues

By Conner Middelmann

The eurobond market saw a flurry of new issues in a wide variety of currencies yesterday, but most offerings were of moderate size and targeted mainly at retail investors.

In the sterling sector, Credit Local de France issued \$100m of five-year bonds aimed at European retail investors. The bonds were priced to yield 17 basis points over gilts, a "concessional price" to attract investors who are cautious towards French financial institutions, lead manager NatWest Markets said. Nonetheless, the deal was slow to get off the ground and the spread widened to 20 basis points.

Another sterling issue surfaced for CSW Investments, the holding company of Seaboard, the south-eastern UK electricity distributor. It launched \$100m of 10-year bonds yielding 85 basis points over gilts.

The proceeds of the deal, like those raised through a recent \$400m yankee bond issue, will be used to refinance a £1.1bn loan CSW took out to buy Seaboard early this year. CSW Investments is the UK arm of Texas-based Central & South West Corp.

INTERNATIONAL BONDS

Since the bonds are being issued by a holding company rather than the utility itself, they have a weaker credit rating, which was reflected in the generous yield spread. Bonds issued by higher-rated utilities trade in the 50s and 60s over gilts, dealers said. According to BZW, joint lead with SBC Warburg, the deal saw strong UK institutional demand and was fully placed.

The Canadian dollar sector saw more supply, fuelled by investors' appetite for current-coupon bonds trad-

ing close to par, and retail demand amid continuing heavy redemptions. An estimated C\$3.5bn of bonds is maturing in August and September.

Eurofima, the Basel-based supranational agency that lends to Europe's railway systems, issued C\$100m of six-year bonds - almost a carbon copy of a recent World Bank deal. While retail investors do not usually like such long maturities, they have been moving down the yield curve to pick up yield over US Treasuries, said lead manager CIBC Wood Gundy.

Canadian short yields currently stand well below those in the US, while the longer end still offers a yield pick-up. The bonds were priced to yield 5 basis points over the benchmark Canadian government bond.

The Kingdom of Sweden, a regular borrower in the Canadian dollar sector, also issued C\$100m of bonds, due in December 2002, priced to

New international bond issues

Table with columns: Issuer, Amount, Coupon, Price, Maturity, Fees, Spread, Book-runner. Includes entries for US Dollars, D-Marks, Swiss Francs, Canadian Dollars, Australian Dollars, and Danish Kroner.

return from their summer holiday by launching a \$100m three-year offering via Commerzbank and Hambros. And in the D-Mark sector, CNCP-NKKB International Finance, a Belgian commercial bank, issued DM250m of floating-rate notes, benefiting from the relative scarcity of higher-yielding floating-rate paper.

Salomon warrants deal biggest ever

By Conner Middelmann

Salomon Brothers has launched what is thought to be the largest ever programme of warrants on equity indices, representing 92 per cent of global equity markets' capitalisation. It is the first programme which allows investors to buy and exercise the instruments in three different currencies: US dollars, Swiss francs and D-Marks. The idea is to create a global family of warrants enabling investors to gain exposure to as many markets as they want in the most convenient way, said one market observer. The programme includes 66 individual warrants on 28 equity indices in 24 countries in the Americas, Asia and Europe. The market capitalisation covered by the programme is \$15.5bn. Call and put warrants are available on all indices except Indonesia and the Philippines, where only call warrants are available. The expiry dates are December 3 1997 for the American and Asian warrants and December 10 1997 for the European ones. The options are to be issued by Salomon Brothers German subsidiary and listed on the Frankfurt, Dusseldorf and Stuttgart stock exchanges. The exercise style is American and the pricing format is in local currency, except for the Latin American markets, which are in a US dollar ADR format.

WORLD BOND PRICES

BENCHMARK GOVERNMENT BONDS

Table with columns: Country, Coupon, Red Date, Price, Day's Change, Yield, Week Ago, Month Ago. Lists bonds for Australia, Belgium, Canada, Denmark, Germany, Japan, Netherlands, Portugal, Spain, Sweden, UK Gilts, and US Treasury.

US INTEREST RATES

Table showing Treasury Bills and Bond Yields for various maturities (1-30 years).

BOND FUTURES AND OPTIONS

France

Table for French Bond Futures (MATIF) showing Open, Settle, Price Change, High, Low, Est. vol., Open Int.

Germany

Table for German Bond Futures (LIFFE) showing Open, Settle, Price Change, High, Low, Est. vol., Open Int.

UK Gilts Prices

Table showing Gilts prices for various maturities (1-30 years) including Bid, Offer, and Change.

BOND FUTURES OPTIONS (LIFFE) DM250,000 points of 100%

Table for DM250,000 points of 100% showing Calls and Puts for various maturities.

Italy

Table for Italian Bond Futures (BOT) showing Open, Settle, Price Change, High, Low, Est. vol., Open Int.

Spain

Table for Spanish Bond Futures (MEFF) showing Open, Settle, Price Change, High, Low, Est. vol., Open Int.

UK

Table for UK Gilts Futures (LIFFE) showing Open, Settle, Price Change, High, Low, Est. vol., Open Int.

Japan

Table for Japanese Bond Futures (TOCOM) showing Open, Close, Change, High, Low, Yield, Est. vol., Open Int.

US

Table for US Treasury Bond Futures (CBOT) showing Open, Latest, Change, High, Low, Est. vol., Open Int.

Other Fixed Interest

Table for various international fixed interest instruments including Eurobonds and other government securities.

FT-Actuaries Fixed Interest Indices

Table showing Fixed Interest Indices for various maturities (1-30 years) with columns for Price Index, Change, and Yield.

FT Fixed Interest Indices

Table showing Fixed Interest Indices for various maturities (1-30 years) with columns for Govt. Secs, Price Index, and Yield.

FT/ISMA International Bond Service

Table listing various international bond issues with columns for Issued, Bid, Offer, and Yield.

FT-Actuaries Fixed Interest Indices

Table showing Fixed Interest Indices for various maturities (1-30 years) with columns for Price Index, Change, and Yield.

FT Fixed Interest Indices

Table showing Fixed Interest Indices for various maturities (1-30 years) with columns for Govt. Secs, Price Index, and Yield.

FT/ISMA International Bond Service

Table listing various international bond issues with columns for Issued, Bid, Offer, and Yield.

GILT EDGED ACTIVITY INDICES

Table showing Gilt Edged Activity Indices for various maturities (1-30 years) with columns for Bid, Offer, and Yield.

FT/ISMA International Bond Service

Table listing various international bond issues with columns for Issued, Bid, Offer, and Yield.

Market pi

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MONEY RATE

MARKET

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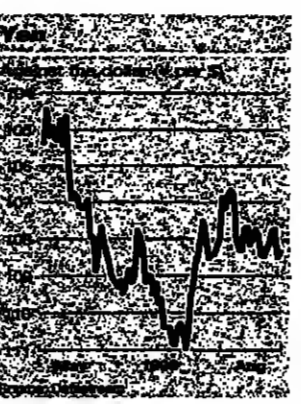
MARKETS REPORT

Market profits from central bank intervention

By Richard Adams
The French franc touched a five-month low against the D-Mark on Europe's foreign exchange markets yesterday...

Swiss franc was halted, at least temporarily. The D-Mark rose to SFR0.809, marginally up from SFR0.807...

The French franc touched a five-month low against the D-Mark on Europe's foreign exchange markets yesterday...



The markets have been slow to react to the US economy's strength. The data suggests the US Federal Reserve may be forced to raise interest rates...

The second quarter, rather than the earlier 12.9 per cent growth. There has been little sign yet of a slowdown in the economy during the third quarter...

round of Emu, Mr Asbrink's comments strengthened the view that the kroner would remain outside the European exchange rate mechanism (ERM) for the time being...

WORLD INTEREST RATES

Table with columns: MONEY RATES, August 29, Over night, One month, Three months, Six months, One year, Lomb. star., Da. rate, Repo rate.

EURO CURRENCY INTEREST RATES

Table with columns: Aug 29, Short term, 7 days notice, One month, Three months, Six months, One year.

POUND SPOT FORWARD AGAINST THE POUND

Table with columns: Aug 29, Closing mid-point, Change on spot, Bid/offer spread, Days' bid low, One month rate, Three months rate, One year rate, Bank of England.

DOLLAR SPOT FORWARD AGAINST THE DOLLAR

Table with columns: Aug 29, Closing mid-point, Change on spot, Bid/offer spread, Days' bid low, One month rate, Three months rate, One year rate, J.P. Morgan.

CROSS RATES AND DERIVATIVES

Table with columns: Exchange Cross Rates, Aug 29, Bid, Offer, DM, EC, L, F, Nkr, Es, Pta, Sfr, £, \$, ¥, Ecu.

UK INTEREST RATES

Table with columns: LONDON MONEY RATES, Aug 29, Over-night, 7 days, One month, Three months, Six months, One year.

EMS EUROPEAN CURRENCY UNIT RATES

Table with columns: Aug 29, Ecu cent. rates against Ecu, Rate, Change on day, % +/- from % spread, Div. Div.

BASE LENDING RATES

Table with columns: Bank, Rate, %.

SHORT STERLING OPTIONS (LFFE) £50,000 points of 100%

Table with columns: Strike, Calls, Puts, Price, Dec, Mar, Jun, Sep.

SHORT STERLING OPTIONS (LFFE) £50,000 points of 100%

Table with columns: Strike, Calls, Puts, Price, Dec, Mar, Jun, Sep.

ABN-AMRO AssiDomän Interim report January - June 1996. Turnover MSEK 10,231 (11,355)-10%. Profit after net financial items MSEK 1,229 (2,384)-48%.

U.S. \$500,000 Lloyds Bank Plc. Primary Capital Unlimited Floating Rate Notes (Short-Term). For the three months, August 31, 1996 to November 29, 1996.

U.S. \$250,000 BANK OF BOSTON CORPORATION Subordinated Floating Rate Notes Due 2001. Interest Rate 5.6875% per annum.

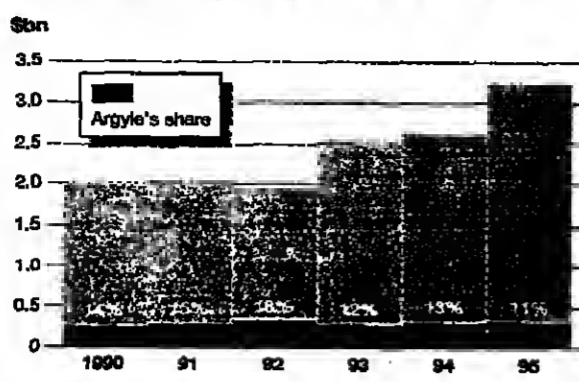
ECU 3,000,000,000 Euro Medium Term Note and Euro Depositary Receipt Programme of Lavoro Bank Overseas N.V. Banca Nazionale del Lavoro S.p.A.

COMMODITIES AND AGRICULTURE

De Beers blamed for Indian diamond turmoil

By Kenneth Gooding, Mining Correspondent
Blame for the turmoil in the Indian diamond cutting industry lay squarely with De Beers and its Central Selling Organisation, which is responsible for the international rough (or uncut) diamond cartel, said Mr John Robinson, managing director of Ashton Mining, yesterday.

Indian net rough diamond imports



Industry were being exaggerated. The rise in diamond stocks and debt had to be seen in the context of a fast-growing industry. Between 1992 and 1995 the value of polished diamond exports from India jumped by 90 per cent, from US\$2.4bn to \$4.6bn.

Swedish group to launch London pulp futures

By Greg McIvor in Stockholm
OM Gruppen, the Swedish derivatives exchange operator, is to launch a trading house for wood pulp futures and options in London early next year.

for paper companies. In just over two years prices have sunk from USD1,000 per tonne to USD400, and are now rising again. The pulp market, once dominated by North American and Scandinavian (Norscan) groups, has become increasingly volatile following the emergence of large producers in the Asia-Pacific region and Latin America.

traded initially, and the market would later be extended to derivatives in timber, waste paper, newsprint and other grades.

southern hemisphere producers. Price volatility has increased and the gaps between the ups and downs have been getting wider and wider. This obviously constitutes a vast problem for the industry," he said.

bleached softwood kraft will also allow trades in that grade. World production of paper and pulp is about 200m tonnes annually, of which some 40m tonnes is traded on the spot market.

Fish oil producers' group hits back at Greenpeace campaign

By Deborah Hargreaves
Fish oil producers yesterday hit out at a campaign by Greenpeace, the environmental group, against "industrial" fishing in the North Sea, saying it had got its facts wrong.

summer goods group, which takes about 20 per cent of the fish oil produced from the North Sea, said earlier this year it would stop using fish oil derived from "industrial" fishing.

Hindustan Copper wants to close unprofitable mines

By Kunal Bose in Calcutta
Hindustan Copper is planning to close its highly unprofitable mines at Kendadih and Rakha in the Singhbhum district of Bihar, a state in the east of the country.

said Mr Prasad. "The mines are so deep that we are required to hoist copper ore in three stages. These mines are the second deepest in the country after the Kolar gold mines. We should have moved to new sites a long time ago."

31,000-tonne smelter at Khetri. Mr Prasad said that while the company would try to convince the Bihar government to release land on a long-term lease, it would ask the federal government to provide funds for the development of new mines.

COMMODITIES PRICES

BASE METALS

Table with columns for metal type (Aluminum, Lead, Tin), price change, high, low, and volume. Includes sub-sections for London Metal Exchange and Precious Metals continued.

GRAINS AND OIL SEEDS

Table with columns for grain type (Wheat, Soybeans, Barley), price change, high, low, and volume.

SOFTS

Table with columns for soft commodity type (Cocoa, Coffee, Sugar), price change, high, low, and volume.

MEAT AND LIVESTOCK

Table with columns for livestock type (Live Cattle, Live Hogs, Pork Bellies), price change, high, low, and volume.

ENERGY

Table with columns for energy type (Crude Oil, Heating Oil, Natural Gas), price change, high, low, and volume.

PRECIOUS METALS

Table with columns for precious metal type (Gold, Silver, Platinum), price change, high, low, and volume.

INDEXES

Table with columns for index type (FTSE 100, Nikkei, DAX), price change, high, low, and volume.

JOTTER PAD

Vertical text area containing various market notes and updates.

CROSSWORD

Crossword puzzle grid with clues and the number 9,160 Set by GRIFFIN.

FUTURES DATA

Table with columns for futures contract type (Crude Oil, Natural Gas, etc.), price change, high, low, and volume.

LONDON TRADED OPTIONS

Table with columns for option type (Aluminum, Copper, etc.), price change, high, low, and volume.

LONDON SPOT MARKETS

Table with columns for spot market type (Crude Oil, Brent Crude, etc.), price change, high, low, and volume.

DISPATCH

Vertical text area containing various market notes and updates.

DOWN

Vertical text area containing various market notes and updates.

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OFFSHORE AND OVERSEAS

BERMUDA (SIB RECOGNISED)

Table listing Bermuda funds including Bermuda Bond Fund, Bermuda Equity Fund, Bermuda Growth Fund, etc.

BERMUDA (REGULATED)\*\*

Table listing Bermuda regulated funds including Bermuda Bond Fund, Bermuda Equity Fund, Bermuda Growth Fund, etc.

GUERNSEY (REGULATED)\*\*

Table listing Guernsey regulated funds including Guernsey Bond Fund, Guernsey Equity Fund, Guernsey Growth Fund, etc.

GUERNSEY (SIB RECOGNISED)

Table listing Guernsey SIB recognised funds including Guernsey Bond Fund, Guernsey Equity Fund, Guernsey Growth Fund, etc.

IRELAND (SIB RECOGNISED)

Table listing Ireland SIB recognised funds including Ireland Bond Fund, Ireland Equity Fund, Ireland Growth Fund, etc.

IRELAND (REGULATED)\*\*

Table listing Ireland regulated funds including Ireland Bond Fund, Ireland Equity Fund, Ireland Growth Fund, etc.

GUERNSEY (REGULATED)\*\*

Table listing Guernsey regulated funds including Guernsey Bond Fund, Guernsey Equity Fund, Guernsey Growth Fund, etc.

GUERNSEY (SIB RECOGNISED)

Table listing Guernsey SIB recognised funds including Guernsey Bond Fund, Guernsey Equity Fund, Guernsey Growth Fund, etc.

IRELAND (SIB RECOGNISED)

Table listing Ireland SIB recognised funds including Ireland Bond Fund, Ireland Equity Fund, Ireland Growth Fund, etc.

IRELAND (REGULATED)\*\*

Table listing Ireland regulated funds including Ireland Bond Fund, Ireland Equity Fund, Ireland Growth Fund, etc.

GUERNSEY (REGULATED)\*\*

Table listing Guernsey regulated funds including Guernsey Bond Fund, Guernsey Equity Fund, Guernsey Growth Fund, etc.

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ISLE OF MAN (SIB RECOGNISED)

Table listing Isle of Man SIB recognised funds including Isle of Man Bond Fund, Isle of Man Equity Fund, Isle of Man Growth Fund, etc.

ISLE OF MAN (REGULATED)\*\*

Table listing Isle of Man regulated funds including Isle of Man Bond Fund, Isle of Man Equity Fund, Isle of Man Growth Fund, etc.

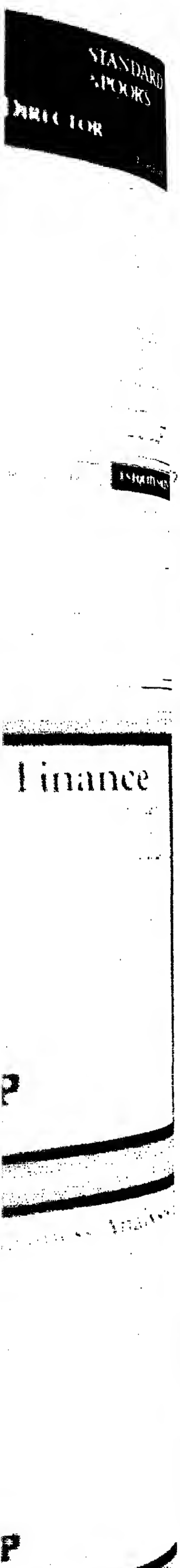
ISLE OF MAN (SIB RECOGNISED)

Table listing Isle of Man SIB recognised funds including Isle of Man Bond Fund, Isle of Man Equity Fund, Isle of Man Growth Fund, etc.

ISLE OF MAN (REGULATED)\*\*

Table listing Isle of Man regulated funds including Isle of Man Bond Fund, Isle of Man Equity Fund, Isle of Man Growth Fund, etc.

GUCCI advertisement featuring a watch and text: GUCCI TIMEPIECES ARE AVAILABLE FROM GUCCI BOND STREET W1, GUCCI SLOANE STREET SW1, HARRODS AND SELFRIDGES. ALSO AT SELECTED GEMMETS, LESLIE DAVIS, GOLDMITHS, WALKERS AND HALL, WATCHES OF SWITZERLAND, HAPPA AND WEBER, BEAUBOURNS AND OTHER FINE JEWELLERS.



Offshore Funds and Insurances

FT MANAGED FUNDS SERVICE

FT Cityline Unit Trust Prices are available over the telephone. Call the FT Cityline Help Desk on (+44 171) 673 4878 for more details.

Main table containing financial data for various funds and insurance products, including columns for fund names, prices, and performance metrics.

Handwritten text at the bottom center of the page: 'سكنا من الاجل'

Vertical text on the right edge of the page: 'OFFSHORE'



صحة من الامل

FT MANAGED FUNDS SERVICE

FT Cityline Unit Trust Prices are available over the telephone. Call the FT Cityline Help Desk on (44 171) 673 4878 for more details.

Offshore Insurances and Other Funds

Main table listing various fund categories such as Global Asset Management, Global Currency Funds, India Investment, Lloyd George Management, Orion Capital Advisors, and others. Each entry includes fund name, price, and performance metrics.

HELP FILL THE CARE GAP IN BRITAIN. THE Macmillan APPEAL. Over one million people are living with cancer in Britain today - and the number is growing. We need 150 more nurses before the end of this year to bring their unique care and relief to many more patients. Give now - it's in all our interests. (1 in 3 of us get cancer).

CEMENT

REPORT

MANAGED FUNDS NOTES: Please see page 24 for more information on the funds listed in this section. The information is provided for your information only and does not constitute an offer of any fund. The information is provided for your information only and does not constitute an offer of any fund.

LONDON SHARE SERVICE

ALCOHOLIC BEVERAGES	CHEMICALS - Cont.	ELECTRONIC & ELECTRICAL EQPT - Cont.	EXTRACTIVE INDUSTRIES - Cont.	HOUSEHOLD GOODS - Cont.	INVESTMENT TRUSTS - Cont.
ALCOHOLIC BEVERAGES	CHEMICALS - Cont.	ELECTRONIC & ELECTRICAL EQPT - Cont.	EXTRACTIVE INDUSTRIES - Cont.	HOUSEHOLD GOODS - Cont.	INVESTMENT TRUSTS - Cont.
BANKS, MERCHANT	DISTRIBUTORS	ENGINEERING	FOOD PRODUCERS	INSURANCE	INVESTMENT TRUSTS
BANKS, RETAIL	BREWERIES, PUBS & REST	BUILDING & CONSTRUCTION	DIVERSIFIED INDUSTRIALS	ENGINEERING - Cont.	FOOD PRODUCERS - Cont.
CHOCOLATE	ELECTRICITY	ELECTRONIC & ELECTRICAL EQPT	ENGINEERING, VEHICLES	GAS DISTRIBUTION	HEALTH CARE
CHEMICALS	EXTRACTIVE INDUSTRIES	HOUSEHOLD GOODS	INVESTMENT TRUSTS SPLIT CAPITAL		



صندوق الاستثمار

LONDON SHARE SERVICE

NAV TRUSTS SPLIT CAPITAL - Cont.

Table listing NAV trusts split capital with columns for Name, Price, and % Change.

LEISURE & HOTELS - Cont.

Table listing Leisure & Hotels companies with columns for Name, Price, and % Change.

LIFE ASSURANCE

Table listing Life Assurance companies with columns for Name, Price, and % Change.

MEDIA

Table listing Media companies with columns for Name, Price, and % Change.

PAPER, PACKAGING & PRINTING

Table listing Paper, Packaging & Printing companies with columns for Name, Price, and % Change.

PHARMACEUTICALS

Table listing Pharmaceutical companies with columns for Name, Price, and % Change.

PROPERTY - Cont.

RETAILERS, FOOD

Table listing Retailers, Food companies with columns for Name, Price, and % Change.

RETAILERS, GENERAL

Table listing Retailers, General companies with columns for Name, Price, and % Change.

TELECOMMUNICATIONS

Table listing Telecommunications companies with columns for Name, Price, and % Change.

TEXTILES & APPAREL

Table listing Textiles & Apparel companies with columns for Name, Price, and % Change.

TOBACCO

Table listing Tobacco companies with columns for Name, Price, and % Change.

TRANSPORT

Table listing Transport companies with columns for Name, Price, and % Change.

AIM - Cont.

Table listing AIM companies with columns for Name, Price, and % Change.

AMERICANS

Table listing American companies with columns for Name, Price, and % Change.

CANADIANS

Table listing Canadian companies with columns for Name, Price, and % Change.

SOUTH AFRICANS

Table listing South African companies with columns for Name, Price, and % Change.

OTHER INVESTMENT TRUSTS

Table listing Other Investment Trusts with columns for Name, Price, and % Change.

OIL EXPLORATION & PRODUCTION

Table listing Oil Exploration & Production companies with columns for Name, Price, and % Change.

INVESTMENT COMPANIES

Table listing Investment Companies with columns for Name, Price, and % Change.

OIL, INTEGRATED

Table listing Oil, Integrated companies with columns for Name, Price, and % Change.

OTHER FINANCIAL

Table listing Other Financial companies with columns for Name, Price, and % Change.

LEISURE & HOTELS

Table listing Leisure & Hotels companies with columns for Name, Price, and % Change.

PROPERTY - Cont.

Table listing Property companies with columns for Name, Price, and % Change.

SUPPORT SERVICES

Table listing Support Services companies with columns for Name, Price, and % Change.

AIM

Table listing AIM companies with columns for Name, Price, and % Change.

Automatic Call Distributor (ACD) technology, which handles high volume in-coming calls, was pioneered by Rockwell.



GUIDE TO LONDON SHARE SERVICE

Please refer to the London Share Service delivered by FT Direct, a member of the Financial Times Group.

Prices for the London Share Service delivered by FT Direct, a member of the Financial Times Group.

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LONDON STOCK EXCHANGE

MARKET REPORT

US news undermines sentiment in shares

By Steve Thompson, UK Stock Market Editor

The prospects of a rise in US interest rates following the next meeting of the US Federal Reserve's policy making committee, the FOMC, returned to haunt global markets yesterday, including London.

Within sight of the recent all-time highs, many of the UK's stocks finally gave way in the wake of the news from the US, sliding back to close only a shade above the day's lowest levels.

The FT-SE 100 index, which burst through to new all-time intra-day and closing highs on Wednesday, finished the day a hefty 33.7 down at 3,885.0, with the FT-SE Actuaries All-Share index, which also reached a new peak on Wednesday, similarly pressured.

With the big investing institutions concentrating their selling efforts on the highly liquid leaders, there was much less downward pressure on the second-line, represented by the FT-SE Mid 250 index, which closed with a modest 5.7 decline at 4,432.1.

US stocks and bonds fell heavily in the wake of the economic news, which showed a sharper than expected upward revision in US second quarter gross domestic product and strong new home sales.

The news saw the yield on the US 30-year bond move back above the 7 per cent level and drive the Dow Jones Industrial Average down over 40 points shortly after the opening.

Leading marketmakers said London had been surprised by the weight of selling in the market as the news from across the Atlantic was absorbed. "There was some big selling and we certainly had to take some sizeable lumps of stock on board," said one dealer.

Bid hint drives Hambros

By Lisa Wood, Joel Kibazo, Jeffrey Brown and John Dluhadu

Shares in merchant bank Hambros rose in early trading as speculation of a possible bid for the UK group did the rounds in the market.

Land 6 to 46 1/4p. Brixton put a penny to 185p and Capital Shopping 6 to 33 1/2p. Cadbury Schweppes rose 6 to 51 1/2p ahead of next week's interim results which are expected to come in at the upper end of the broker forecast range.

The stock traded an above-average 5.2m shares with a further 1.3m equivalent passing through the traded option pits.

Food retailers were adversely affected by reports from J Sainsbury that it was "on track" to achieve 2 to 3 per cent sales growth after the launch of its Reward loyalty card in June.

6% to 242p, but volumes are modest. Some brokers have begun to pinpoint value in the sector. Cable & Wireless, which has fallen almost 25 per cent since April, stayed firmly on the downside in spite of a positive note from NatWest Securities.

A broker pinpoints the potential for what it describes as an emerging management story, and sets a number of specific target prices for the shares, starting at 460p.

NatWest analysts expect the City profile of Mr Dick Brown, C&W's new chief executive, to have an increasing impact on sentiment over the immediate term.

The stock, which has risen steadily since mid-July, advanced further in the first half of the session before profit-takers gained the upper hand. The shares eventually closed unchanged at 267 1/4p.

Second line stocks were the main beneficiaries. Slough advanced more than 4 per cent to top the FT-SE Mid 250 rankings, and stocks underpinning the Brixton Estates met with good demand.

SEAO bargains 36,751 36,207 34,988 32,431 26,823 22,496 Equity turnover (m) 16,720 12,885 13,983 14,802 12,498 Equity bargains 42,203 36,003 36,046 35,547 34,018 Shares traded (m) 624.0 478.2 554.2 551.4 701.9

At all events the sector held very steady in the face of the heavy afternoon sell-off for equities generally. Slough gained 11 to a new 52-week high of 248p, British

Indices and ratios table showing FT-SE 100, FT-SE Mid 250, FT-SE All-Share, and various ratios like P/E, Dividend Yield, etc.

Futures and Options table showing FT-SE 100 Index Futures (Liffe) and FT-SE 100 Index Options (Liffe) with various contract details.

Trading Volume table showing Major Stocks with columns for Volume, Closing Day's Change, and Price.

CONTRACTS & TENDERS section featuring PARANM SALTO CAXIAS HYDROELECTRIC POWER STATION INTERNATIONAL BIDDING C-302.

COMPANY NOTICES section featuring Leblon Sales Corporation and PFI International, Inc.

COMPANY NOTICES section featuring Koaia FSC, Ltd. and CODAN Services, Ltd.

PUBLIC NOTICES section featuring NOTICE OF APPOINTMENT OF JOINT LIQUIDATORS and NOTICE TO CREDITORS TO CLAIM.

PHARMACEUTICAL BUSINESS NEWS section featuring 'The twice-monthly international update on the pharmaceutical industry' and 'Who should read Pharmaceutical Business News?'.

FT-SE Actuaries Share Indices table showing various share indices and their performance.

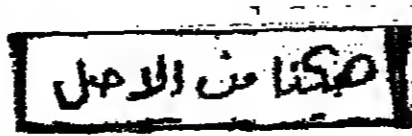
FT-SE Actuaries All-Share table showing detailed share indices and their performance.

Hourly movements table showing stock price movements at different times of the day.

FT-SE Actuaries 350 Industry baskets table showing performance across various industry sectors.

Additional information table providing further details on the FT-SE Actuaries Share Indices.

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سكنا من الاجل

Highs & Lows shown on a 52 week basis

WORLD STOCK MARKETS

EUROPE

Table of stock market data for Europe, including indices and individual stock prices for various countries like Germany, France, and the UK.

ASIA

Table of stock market data for Asia, including indices and individual stock prices for countries like Japan, Hong Kong, and Singapore.

AMERICA

Table of stock market data for America, including indices and individual stock prices for the US and Canada.

AFRICA

Table of stock market data for Africa, including indices and individual stock prices for South Africa and other regional markets.

ISLANDS

Table of stock market data for island markets, including indices and individual stock prices for the UK and other regions.

Advertisement for Peregrine investment bank, featuring the text 'Asian Focus. Global Distribution.' and 'We know your needs, we know Asia.'

EUROPE (continued)

Continuation of European stock market data, listing various companies and their share prices.

ASIA (continued)

Continuation of Asian stock market data, listing various companies and their share prices.

AMERICA (continued)

Continuation of American stock market data, listing various companies and their share prices.

AFRICA (continued)

Continuation of African stock market data, listing various companies and their share prices.

ISLANDS (continued)

Continuation of island stock market data, listing various companies and their share prices.

INDICES

Table of various stock indices, including the FTSE 100, Nikkei 225, and others, with their current values and 52-week ranges.

US INDICES

Table of US stock indices, including the Dow Jones Industrial Average, S&P 500, and others.

ASIA (continued)

Continuation of Asian stock market data, listing various companies and their share prices.

AMERICA (continued)

Continuation of American stock market data, listing various companies and their share prices.

AFRICA (continued)

Continuation of African stock market data, listing various companies and their share prices.

INDICES (continued)

Continuation of various stock indices, including the FTSE 100, Nikkei 225, and others.

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Continuation of US stock indices, including the Dow Jones Industrial Average, S&P 500, and others.

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Continuation of Asian stock market data, listing various companies and their share prices.

AMERICA (continued)

Continuation of American stock market data, listing various companies and their share prices.

AFRICA (continued)

Continuation of African stock market data, listing various companies and their share prices.

INDICES (continued)

Continuation of various stock indices, including the FTSE 100, Nikkei 225, and others.

US INDICES (continued)

Continuation of US stock indices, including the Dow Jones Industrial Average, S&P 500, and others.

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Continuation of Asian stock market data, listing various companies and their share prices.

AMERICA (continued)

Continuation of American stock market data, listing various companies and their share prices.

AFRICA (continued)

Continuation of African stock market data, listing various companies and their share prices.

Small text at the bottom of the page, likely containing legal disclaimers or publication information.

NEW YORK STOCK EXCHANGE PRICES

Main table of stock prices with columns for stock symbols, prices, and changes. Includes sub-sections for 'NEW YORK STOCK EXCHANGE PRICES', 'NASDAQ LISTED STOCKS', and 'NASDAQ LISTED STOCKS'.

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مكتبة الامم

Continued on next page

NYSE PRICES

NASDAQ NATIONAL MARKET

Table of NYSE stock prices including columns for stock name, price, and change. Includes sub-sections for 'Continued from previous page', 'T', 'U', and 'X-Y-Z'.

Table of NASDAQ National Market stock prices including columns for stock name, price, and change. Includes sub-sections for 'Continued from previous page', 'T', 'U', and 'X-Y-Z'.

AMEX PRICES

Table of AMEX stock prices including columns for stock name, price, and change.

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Advertisement for 'Have your FT hand delivered in Norwayway' with contact information for Bergon, Oslo, Stavanger and Trondheim.

Advertisement for 'Norwayway' with contact information for Bergon, Oslo, Stavanger and Trondheim.

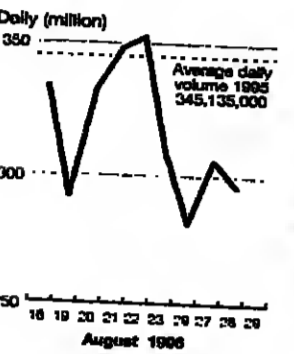
AMERICA

Interest rate concerns take Dow lower

Wall Street

Interest rate concerns raised by a stronger-than-expected report on second quarter economic growth sent US share prices lower at mid-session, writes Lisa Brunsten in New York.

NYSE volume



1,150.94 and the Pacific Stock Exchange technology index fractionally down.

The yield on the benchmark 30-year Treasury bond rose above 7 percent for the first time since late July as both the stock and bond markets were unsettled by the Commerce Department's report that the gross domestic product grew by 4.8 percent in the second quarter.

Commercial banks, espe-

Futures drive S Africa

The futures related strategies adopted by a small number of local banks continued to determine Johannesburg's direction with prices closing higher on persistent demand from these investors.

Mexico City rocked

News that guerrillas had launched attacks in two southern states and left several people dead rocked the markets in MEXICO CITY.

dally sensitive to changes in interest rates, were weaker. Chase Manhattan Bank lost 5 1/4% at \$76.74. Citicorp lost 5 1/4% at \$65.75 and Bankers Trust was off 5/8% at \$78.74.

Shares in Baxter International jumped 8 3/4% or 5 percent to \$45 after the company announced that it had agreed to buy Immuno International in a deal valued at about \$715m.

Housecall Medical Services, a home healthcare company, lost over 60 percent of its value as the shares tumbled 7 3/4% to \$71.

Shares in Hilton Hotels opened as much as 8 1/4% stronger on news that it had formed a marketing alliance with Ladbroke Group of the UK, but by early afternoon the shares were off 8 3/4% at \$106 3/4.

Red Lion Hotels added 3 3/4% or 15 percent to \$27.74 after announcing that it was in negotiations to be acquired by Doubletree, another hotel company. Shares in Doubletree were unchanged at \$38 1/2.

Sierra Semiconductor jumped 3 3/4% or 26 percent to \$11.75 after saying that it planned to leave the modem chipset business.

Canada Toronto was mixed at mid-session, sapped of energy and direction ahead of the forthcoming long holiday weekend.

The TSE 300 composite index was 4.99 easier by noon at 6,179.10 in volume of 41m shares.

The market was abuzz with a rumour that RBC Dominion Securities, the brokerage arm of Royal Bank of Canada, might offer to buy the independent Richardson Greenshields, the stockbroker, for about C\$480m.

Circo Craft rose 65 cents to C\$10.90 on rumours that a higher bid was imminent for the circuit board manufacturer, already subject to a hostile C\$9.50 per share bid.

ment in sentiment after the release of July balance of trade data that showed a sharp turnaround in South Africa's trade position.

Anglo American gained R5.20 to R270 in further response to Wednesday's plan to sell most of its 47 percent stake in Johnnies Industrial, currently shared with De Beers. Johnnies slipped 25 cents to R55.75.

posts in the southern states of Oaxaca and Guerrero. The attacks were apparently launched by a new rebel force calling itself the Popular Revolutionary Army.

SAO PAULO was slightly firmer in early trading with Telebras providing the backbone to the session's activity. The Bovespa index was up 175 at 63,123 by noon. Telebras was up R\$0.16 at R\$2.15.

EUROPE

Paris leads bourses down in weak afternoon

The upward revision in US second-quarter GDP growth data upset an already nervous PARIS. With the franc weaker against the D-mark, and expectations rising that the country's trade unions were planning a series of strikes this autumn in protest against the government's social and economic policies, the CAC-40 index lost 25.34 or 1.3 percent at 1,977.56.

Turnover was over FFr3bn. Eridania Beghin-Say, the Franco-Italian agro-food conglomerate, lost FFr18 or 2.4 percent to FFr74. Lagardere, expected to make a bid for the parent, said it would control at least 90 percent of the new merged group. Lagardere shed FFr3.20 or 2.6 percent to FFr71.2. Alcatel Alsthom, a potential rival bidder, fell FFr7.20 or 1.8 percent to FFr90.80.

There was relative strength in consumer names where Volkswagen put on another 90 ppg at DM65.50, and Daimler fell only 41 ppg to DM90.85 after its half year profits came out at the top end of expectations; in chemicals, with profit taking in train, Bayer fell 77 ppg to DM52.78.

However, there were bigger movements in auto components. Varta dropped with further disappointment

FT-SE Actuaries Share Indices

Table with columns for Hourly changes, Open, 10.30, 11.00, 12.00, 13.00, 14.00, 15.00, Close. Rows include FT-SE Actuaries 100 and FT-SE Actuaries 200.

a minimal gain to a small loss on the US data, the Dax index closing 7.90 lower at 2,548.84 in turnover down from DM6.9bn to DM6.6bn.

There were bigger movements in auto components. Varta dropped with further disappointment

as Georg Fischer unveiled sharply lower first half net profits. The SMI index, also under pressure from the US data, fell 10.0 to 3,652.5.

There was relative strength in consumer names where Volkswagen put on another 90 ppg at DM65.50, and Daimler fell only 41 ppg to DM90.85 after its half year profits came out at the top end of expectations; in chemicals, with profit taking in train, Bayer fell 77 ppg to DM52.78.

However, there were bigger movements in auto components. Varta dropped with further disappointment

ASIA PACIFIC

Nikkei falls on uncertain outlook for economy

The uncertain outlook for the Japanese economy weighed on sentiment and the Nikkei averaged a net loss on small lot sellings, writes Emiko Terazono in Tokyo.

The 225 index fell 156.66 to 20,552.16 after trading between 20,503.62 and 20,706.99. The Topix index of all first section stocks fell 12.91 to 1,559.21 and the Nikkei 300 lost 2.36 to 290.39.

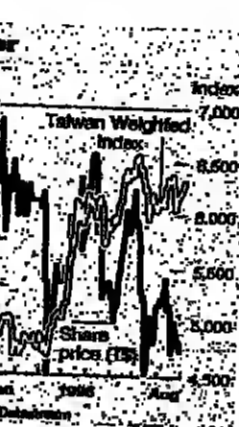
Worries about the weakness of economic recovery affected the futures market. Small lot, arbitrage-linked sales and profit taking by foreign investors depressed share prices in low volume and traders said that investors were likely to remain on the sidelines until favourable economic indicators confirmed a more robust rebound in the economy.

Volume fell to 227m shares from 265m. Declines exceeded advances by 804 to 222, with 189 unchanged.

In London, the ISE/Nikkei 50 index rose 2.83 to 1390.92. High-technology stocks faced selling by foreign investors. Matsushita Electric Industrial fell Y40 to Y1,850 and Toshiba lost Y4 at Y709.

Sumitomo Corporation, the trading company, fell Y8 to Y908 on selling by individual investors. The stock, which was soft after heavily following its announcement of \$1.5bn in losses stemming from unauthorised copper trading, had lost 25 percent since mid-June, when it released its loss figure. Traders said that the continued lack of information over the case was prompting sales by investors.

Green Cross, the drug maker specialising in blood products, fell Y3 to Y446. The stock was sold last week on the raid of its head office by prosecutors investigating



of Acer's woes the weighted index rose 55.67 to 6,266.76 as foreign institutions bought large-capitalisation blue chips in the financial, steel and petrochemical sectors.

HONG KONG took a gloomy view of a share placing rumour and the Hang Seng index lost 51.28 to 11,328.21 as turnover picked up to HK\$4.1bn.

Trading in New World Development was suspended during the afternoon, when the stock was down 90 cents at HK\$38.00; the company was rumoured to be placing 70m shares at HK\$37.10 a share.

KUALA LUMPUR's second board ended lower for the first time this week as buyers took a pause following

three days of record-setting gains. Blue chips also finished weaker, but their declines were less pronounced.

The composite index ended 0.94 down at 1,110.49 while the second board dropped 10.89 or 2 percent to 531.06 after hitting a session peak of 545.44.

Powertek, Malaysia's first listing of an infrastructure project, ended at M\$6.60, against an offer price of M\$3.90.

SEOUL was supported by hopes that there would soon be an announcement on the holding of the foreign shareholder limit and the composite index rose 12.81 to 766.16.

MANILA saw speculative

back to close LA1 better on the day at L791.1, reflecting good progress at its 41.3 percent owned mobile telephone group, Omnitel, and an overnight rise in US high technology stocks.

Traders said that the shares were also helped by market talk that a meeting in London this week between Olivetti and institutional investors had dissolved the departure of Mr Carlo De Benedetti, the chairman.

Farmalat, the food and dairy company, gained L72 to L2,049 on the view that the recent successful close of its cash call had made the stock attractive again.

COPENHAGEN saw mixed results from some big blue chips as the KFX index fell 0.76 to 119.27. Tele Danmark eased DKR3 to DKR275 on figures slightly below expectations. Codan, the insurer, leapt DKR60 or 7.1 percent to DKR910 on a bumper report, but Saphor Berendsen, the holding company which retains a 37.5 percent stake in Britain's Rentokil, fell DKR28 to DKR92 although its profits were higher.

Written and edited by William Cochrane, Michael Morgan and John Pitt



Group, dropped FI 4.30 to FI 126.50 as its first half results came in at the lower end of expectations, and Fortis Amey, the insurer, eased FI 1.90 to FI 50.90, as its results also disappointed a number of brokers.

AMSTERDAM was busy with interim results as the AEX index closed down 4.43 at 558.95.

Gist Brocades, the biotechnology company, showed a slight first half rise, forecast a substantial full year gain but fell FI 2.30 to FI 54.30. Hagemeier, the trading

buying ahead of the release of important economic data next week. The composite index added 14.81 to 3,215.79.

The mining index soared 405.44 to 4,102.68. SYDNEY ended slightly lower after a volatile session. The All Ordinaries index shed 49 to 2,279.3 in turnover of A\$979.7m.

Brokers said that selling from offshore investors appeared to hit BHP in the last 90 minutes of trading, causing the stock to lose 17 cents to A\$17.40.

Australian Gas Light proved the day's highlight, jumping 42 cents to A\$6.00 on the back of a strong profit result. The gas distribution concern reported a 32 percent rise in after-tax profit for the fiscal year ending on June 30.

Newcrest Mining, a gold producer, fell 17 cents or 3.4 percent to A\$4.76 after reporting that its after-tax profit had fallen by 51 percent in the fiscal year ended June 30.

BOMBAY ended 1.59 percent higher after a strong rally triggered profit-taking towards the close. The BSE-30 index finished 64.81 higher at 3493.81, off its intraday peak of 3,529.19.

Analysts noted that the upsurge came in response to reports that the government would ease a controversial minimum tax proposal for some sections of industry, together with some good corporate results.

FT/S&P ACTUARIES WORLD INDICES

Table showing world stock indices by region (Africa, Americas, Europe, Asia Pacific, Middle East, Oceania) with columns for Index, Change, % Change, etc.

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Bank of Tokyo (Curaçao) Holding N.V. advertisement for U.S. \$100,000,000 Guaranteed Floating Rate Notes Due 1997.

CITICORP advertisement for U.S. \$350,000,000 Subordinated Floating Rate Notes Due November 27, 2006.

National Westminster Bank advertisement for US\$ 500,000,000 Primary Capital FRNs.

YOKOHAMA ASIA LIMITED advertisement for U.S. \$100,000,000 Guaranteed Floating Rate Notes Due 1997.

Den norske Bank advertisement for U.S. \$200,000,000 Primary Capital Perpetual Floating Rate Notes.

Den norske Bank advertisement for U.S. \$100,000,000 Primary Capital Perpetual Floating Rate Notes.



صحة من الامل

# AEROSPACE

## Streamlined industry will ride orders surge

Record airline profits and strong growth in orders are not deflecting commercial aircraft manufacturers from the task of consolidation, writes Michael Skapinker

Being of the US buys the defence and space operations of Rockwell, another US group, for \$3bn. Aérospatiale and Dassault Aviation of France warily discuss a government-sponsored merger. The consolidation of the international aerospace

industry shows no sign of slowing down. In the defence sector, the reasons are obvious: the fall in government arms spending since the end of the Cold War means there are fewer contracts to go around. Contractors have to cut their costs and try to buy up the competition. The civil aerospace sector should look different. Aircraft orders are up from their early 1990s slump. Airlines made record profits last year of \$5.2bn on their international scheduled services. Boeing and Airbus Industrie, the European consortium, have increased their output. Boeing says worldwide air travel will increase by 5.1 per cent annually for the next 20 years. Airlines will buy 18,000 new aircraft over this period, bringing manufacturers sales revenues of over \$1,000bn.

when the commercial aircraft business is so clearly a growth industry?

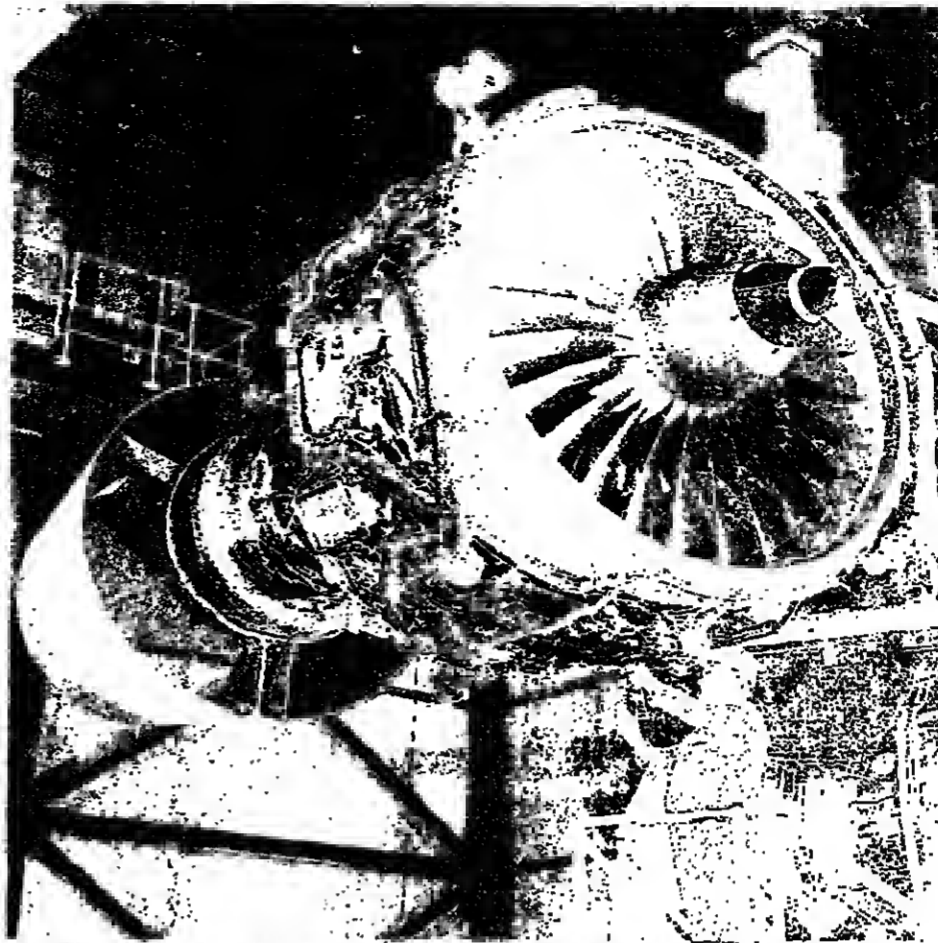
One of the reasons is that airlines have become much more commercial than they were before. Aviation markets are being liberalised and new carriers are undercutting the prices of large airlines. All airlines, even the most successful, feel the need to cut costs. They are, in turn, putting increased pressure on aircraft manufacturers to cut prices. Mr Frank Shrontz, chairman of Boeing, says: "We used to be concerned about product performance: how the airplanes flew. While that's still important, we now have to look more at how much they cost."

British Airways, the highest profit earner in the airline industry, earlier this year suspended plans to spend \$1bn on regional aircraft. BA had asked Boeing, Airbus, McDonnell Douglas and British Aerospace to bid to supply it with up to 60 aircraft. The airline said none of the bids was sufficiently competitive.

While prices are under pressure, the cost of developing new aircraft is high. The "stretched" Boeing could be developed for as little as \$2bn, but that is because it is based on an existing aircraft.

Airbus is considering building a competing aircraft, provisionally called the A3XX. The cost of developing it is expected to be at least \$3bn. Airbus wants to build the aircraft because it feels it needs to be able to compete with Boeing across its entire product range. Boeing, with the 747, has a monopoly over the 400-seat aircraft market.

Mr Jean Pierson, Airbus's managing director, said earlier this year: "In our business, one simply cannot survive as a niche participant. Some very fine, proud aero-



Rolls Royce is working on a version of its Trent engine to power the Airbus A3XX

nautical firms have paid a high price for this lesson. Consolidation, coupled with shrinking defence budgets, might well be the driver behind the current spate of alliance-making in the aerospace industry in Europe.

"Let us bear in mind that it was just such a rapprochement in Europe that made Airbus Industrie a reality and enabled Europe to re-establish itself as a world force in civil aircraft manufacturing. European economies have benefitted from the decision, taken 26 years ago, to abandon, in civil aircraft manufacturing, narrowly-focused nationalist pursuits in favour of a collective approach."

To build the A3XX, Airbus is looking further afield than Europe, hoping to persuade manufacturers in Asia to help develop the aircraft.

China is seen by both Boeing and Airbus as the market they have to play a part in. Boeing says it expects air

traffic growth in China to average 11.5 per cent over the next two decades - more than twice the increase for the world as a whole. Boeing has a strong presence in China but the Europeans are battling to catch up. Airbus has established an office in Beijing. Its staff there has increased from five to 70 over the past two years. It has invested \$50m in joint ventures in China and is advertising heavily on Chinese television and on billboards.

Airbus's efforts were rewarded earlier this year with an order from China for 30 A320s, though Chinese anger at the US's opposition to human rights violations also played a part.

The Europeans recently scored a second win when China selected Aero International Regional (AIR), a European consortium, to be its partner in the development of a 100-seat jet. The decision confirmed earlier indications

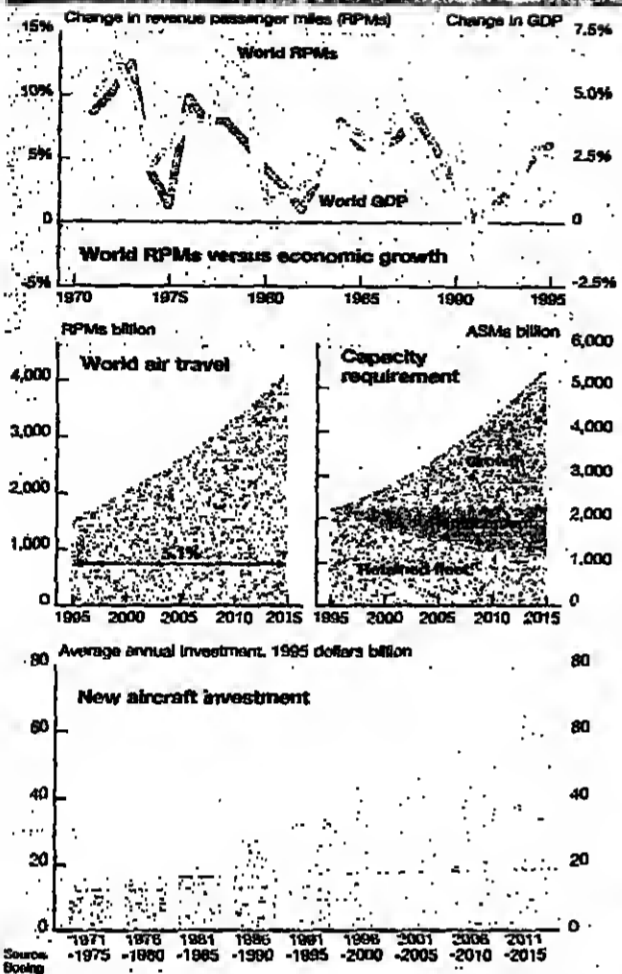
that the Europeans were the favoured partners.

AIR is owned by British Aerospace, Aérospatiale and Alenia of Italy and is not part of Airbus. The Chinese have indicated, however, that they would like Airbus to manage the 100-seater project and that they would prefer Dasa to be included.

The aero engine business is undergoing its own consolidation but Mr Colin Green, managing director of Rolls-Royce's aerospace division, believes it will take a different form. Instead of mergers, he says, manufacturers will become involved in an increasing number of joint projects.

There are three large engine manufacturers: Rolls-Royce of the UK, and General Electric and Pratt & Whitney of the US. There have been persistent rumours that a merger between two of the three

Air travel, investment and the economy



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# HARD TO BEAT



2 AEROSPACE

New large aircraft by Michael Donne

# Big three join in Jumbo battle

They are vying to produce the best family of large, long-range aircraft

Pressures for the development of a new series of larger, long-range jet airliners have been intensifying in recent years, as the airlines have recovered from their financial problems of the earlier 1990s, and passenger and cargo traffic has continued to grow. With all the forecasts indicating a continued period of traffic growth worldwide, and in particular an expansion of long-haul traffic to, from and within the vast Asia-Pacific region, those pressures have reached the point where firm procurement decisions on bigger aircraft cannot be long delayed.

All the "big three" jetliner makers - Boeing and McDonnell Douglas of the US, and Airbus Industrie of Western Europe - are engaged in refining their proposals in a market that

may not be large in terms of unit numbers, but will be very lucrative.

Over the period from 1996 to 2014, Boeing foresees sales of some 1,100 aircraft in its broad 747-400s and their immediate direct replacement, the 747-500X, and sales of another 470 of the true "New Large Aircraft", or NLA, the 650-seater 747-600X.

Airbus, in addition to continued sales of its long-range A-340 airliner, now evolving into a family of variants, foresees rather larger sales of more than 1,300 aircraft in the 500-plus seat category alone over the next 20 years. It is offering its A3XX aircraft for this market.

Most other manufacturers' forecasts for the future, including those by McDonnell Douglas and engine makers such as Rolls-Royce, tend towards the lower Boeing figure for NLA's. But no matter which figures are used, it is clear that because the market will be divided

between just the three airframe manufacturers over 20 years, the battle for sales will be fearsome, and break-even production may be a long time coming.

Boeing is now actively, albeit quietly, canvassing launch orders for its two new airliners, even though a formal Boeing board commitment to the aircraft has yet to be made. It seems probable that the two prime decisions - to launch the aircraft and announce the first airline commitments - will be taken together, probably some time this autumn.

Some observers have suggested that it might all happen at the forthcoming Farnborough air show, but Boeing will only say that it will be "in the fall". Both the 747-500X and the 600X will be larger than the existing 747-400 itself, offering more range and seats. Both will have fly-by-wire controls. The 600X will be capable of carrying some 462 passengers in a three-class configuration, against the 416 capacity of the 747-400 (more in an all-economy configuration). It will also be capable of a range of 8,700 nautical miles, thereby opening up many new non-stop routes, such as New York-Hong Kong or Taipei, Los Angeles-Singapore, or Chicago-Taipei.

The 600X, however, will be a much bigger aircraft, over 45 feet longer than the 747-400, and capable of carrying some 530 passengers in a three-class configuration (more in an all-economy role) over 7,750 nautical miles. It will have new, larger wings, tall and landing gear. Both the 500X and 600X will have significantly

improved seat-mile costs over the 747-400, and will offer what Boeing describes as "an affordable airplane family, providing growth in range and capacity".

Boeing will launch the 600X first, because that is what its advisory "working group" of large airlines, including British Airways, Singapore Airlines and others, have said they would like. But Boeing expects demand for both types and will eventually build both aircraft on the same production line at its 747-400 factory at Everett, north of Seattle. Entry into service is set around the year 2000 for the 600X and 2001 for the 500X, a tough target, but one that Boeing believes it can meet. Price per aircraft is not revealed, but it is likely to be more than \$200m.

The Airbus A3XX - a 580-plus seater (carrying more in a "high-density" configuration) with a range of 7,500 nautical miles - is not likely to be far behind Boeing. Airbus has already stated that it sees the NLA as "a profitable market segment which it does not intend to leave to a US monopoly".

To concentrate its activities, Airbus has established an integrated "Large Aircraft Division", headed by senior vice-president, Mr Jürgen Thomas, to undertake all the pre-development activities for the A3XX. The new division's tasks include all detailed design work, in close co-operation with a group of representatives of potential customers. Airbus says that its new aircraft will have "maximum commonality with the existing Airbus Industrie family" while offering "operating

costs at least 15 per cent below those of any very large aircraft in service today or currently under development".

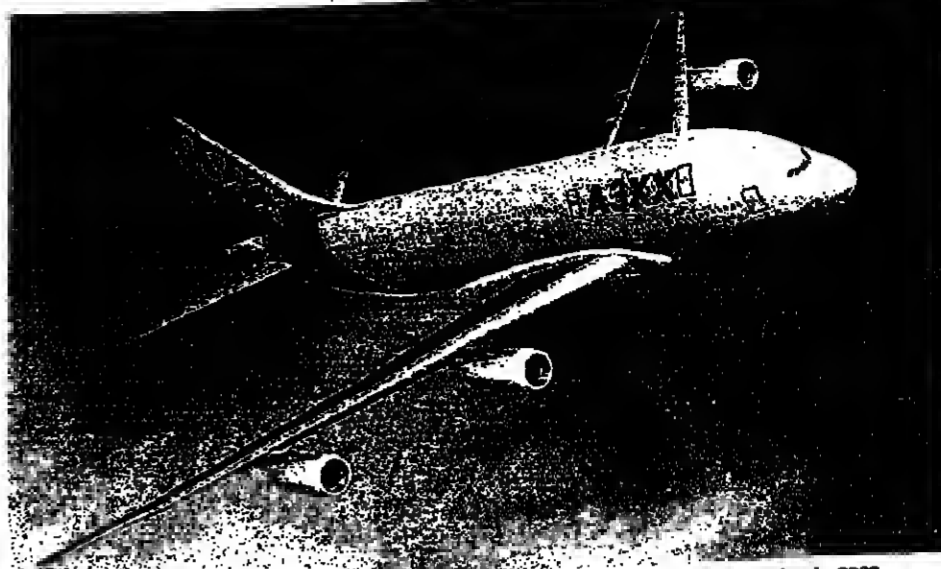
The third contender, McDonnell Douglas, has been working on derivatives of its existing MD-11 tri-jet family, called the MD-XX, including a new "stretched" high capacity aircraft, and an ultra long-range aircraft. Like its two rivals, it has been consulting potential airline customers closely to ensure that their views are reflected in its designs.

Finance is likely to be a big question for all three airframe manufacturers. Development costs will probably run to several billion dollars for each manufacturer. Success will ultimately depend on the ability to raise the necessary funds.

In this area, Boeing is probably best placed. The fact that it is developing direct derivatives, means it can use 747-400 expertise, 747-400 parts and 747-400 production facilities. Also, its track record to date - more than 8,100 of the 9,200 of its jetliners that have been ordered have already been delivered - means it would probably have little difficulty in raising cash from a combination of its own internal resources, its own shareholders, and from outside financial institutions.

McDonnell Douglas, as a leading aerospace conglomerate, also has access to considerable resources, both internally and from shareholders and financial institutions.

The Airbus consortium has already begun procedures to change its corporate structure from that of a



European contender in a promising market: the Airbus A-300, forecast to enter service in 2003

Groupement d'Interet Economique to that of a more transparent limited company, with a view eventually to being able to raise cash from shareholders and external financial institutions. But this change is expected to take three years to

achieve, during which time there will be heavier cash calls for the new A3XX venture.

In the meantime, Airbus will be obliged either to continue to rely heavily upon its partner companies to provide cash for their individual

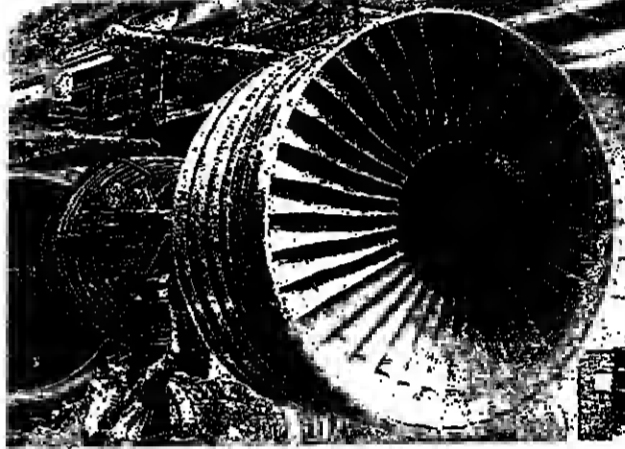
involvements in the A3XX programme, or seek government loans for the project. In this, it may well be more successful than some have suggested: its own record is now a good one, with more than 1,400 of its 2,100 or so ordered jets now delivered.

Engine makers by Michael Donne

# Demand takes off

Re-equipment of the world's airline fleets will boost manufacturers' order books

Demand for new aircraft and engines has begun to rise again from the low levels recorded in the early 1990s. This is the result of both the improving finances of the world's airlines and the expected continued growth of passenger and cargo traffic.



Pratt & Whitney's PW-400 series is aimed at the big jet market

Re-equipment programmes tend to be cautious, with a view to keeping available aircraft capacity under tight control while airlines recoup the heavy losses of the early 1990s and restore their battered balance sheets. So while overall aircraft and engine production volumes are rising again, it is not expected that there will be a return to the almost runaway surge of buying of the late 1980s just prior to the recession.

Sir Ralph Rohms, chairman of Rolls-Royce, one of the world's "Big Three" engine builders (General Electric and Pratt & Whitney of the US are the others), commented in his company's annual report earlier this year: "Civil aviation is a growth industry, and the market is now showing signs of recovery. While this will take a little time to cascade through to the manufacturers, we expect to benefit from this recovery."

Boeing Commercial Airplane Group, the world's biggest jet airliner builder, has forecast that between now and 2015, some 15,500 jet airliners of all kinds will be built, worth some \$1,100 billion.

About 3,900 of these will replace existing aircraft, so that the net growth in the world airliner fleet to meet traffic expansion will be around 12,000 aircraft. This will be good news for the engine builders. A study by Rolls-Royce covering the same broad period is more optimistic than the Boeing forecast, suggesting a demand for over 18,700 aircraft, of which over 13,000 will be jets and the rest turboprops, with a combined value of about \$929bn.

Rolls-Royce assesses the value of the engines to be supplied at \$220bn, with a further \$180bn coming from spare parts for both new and existing aircraft, yielding a total engines market of \$370bn. This overall world market, excluding corporate jets, will cover some 34,200 jet engines and 11,600 turbo-prop engines.

Rolls-Royce believes that just over half of the total jet engine market by value will come from demand for the "big jet" engines for medium-to-long-haul airliners. This "big jet" end of the market is generally taken to

include two broad categories - one covering engines of between 45,000lbs and 65,000lbs of thrust (required for Boeing 747s and 767s, Airbus A-300s and A-310s, and McDonnell Douglas MD-11s), and the other the so-called "very high thrust" engines of 65,000lbs thrust and above (for Airbus A-330s, Boeing 777s and their derivatives, together with the prospective "new large aircraft" discussed above). Although not as large in terms of unit numbers when compared with the thousands of smaller jet and turbo-prop engines that will be bought, these specific market areas nevertheless will be very valuable.

Out of today's overall world civil jet engine sales of around \$6bn annually, the segment comprising all engines of over 45,000lbs thrust collectively accounts for some \$2bn. By 2014-5, when the total world engine market will have risen to over \$14bn annually, over half, or more than \$7bn, will be accounted for by the "big jets", with over half that in turn being accounted for by the "very high thrust" engines of over 65,000lbs thrust each. With such massive markets ahead, competition in the aero engine business is intensifying.

Rolls-Royce's own strategy is to have an engine available for every big new aircraft programme that added Allison Engine Company of the US to its stable so that, with its subsidiaries and joint ventures, it now supplies engines for more than 50 civil and military airframes, with over 60,000 engines in service with 300 airlines, 700 corporate operators and 120 armed forces world-wide.

At the "big jet" end of the market, all of the "big three" engine builders are involved - Rolls-Royce with its Trent family, and the US's General Electric, with its GE-90 and Pratt & Whitney with its PW-4000 series. All three have won orders for engines to power the new Boeing 777, but the Trent has done especially well in Asia-Pacific. The Trent is still the most powerful aero engine in the

world, some 20 months after it was first certificated at 90,000lbs thrust. The Trent also still has significant growth potential, with a 95,000lbs version already committed for certification by 1998.

This engine is designed for "growth" versions (either longer range or higher seating capacity, or both) of the twin-engine Boeing 777. The most immediately significant development in the high thrust engine market, however, is the competition to meet the need for a new engine to power the next generation of Boeing 747 developments, the 747-500X and 600X aircraft, which Boeing is expected to launch this autumn.

Both will have longer range than the 747-400. The 600X will also have much higher capacity at around 550 passengers against the 400-plus in the standard 747-400.

Rolls-Royce has signed an agreement to offer Boeing a new Trent version, the Series 900, for the new Boeing jets. This engine is described as "a low-risk derivative" of the Trent family, designed to achieve the 10 per cent improvement in operating costs that Boeing is seeking for its new aircraft over the 747-400.

Certification is planned for December, 1999. But instead of fighting each other, the two US giants, GE and Pratt & Whitney, have decided to collaborate in a 50/50 joint venture for an engine for the new aircraft. They are taking the best technologies (but not the specific components) of both the PW-4000 and GE-90 series of very high thrust engines, and putting them together to provide a "baseline" engine of up to 84,000lbs thrust initially. These new engines will be suitable for the other new large aircraft now being planned - by Airbus, the European aircraft manufacturing consortium, with the A-3XX, and the McDonnell Douglas MD-XX, based on its existing MD-11 tri-jet. Although the formal orders for all these new aircraft and engines have yet to come, it seems clear that they are not far away.

# The joint adventurers

Continued from page 1

large manufacturers is in prospect, with a Pratt & Whitney takeover of Rolls-Royce mentioned frequently.

Rolls-Royce has repeatedly said that it will not be part of any merger. The UK group's denials have been given added force by the decision of the US companies to team up to develop an engine together for the first time for the stretched Boeing 747.

Mr Green says Rolls-Royce will develop the Trent 900 for use on both the enlarged 747 and the Airbus A3XX. It will be a variation on the group's existing Trent engines and will therefore cost less to develop than an entirely new engine.

While the collaboration between GE and Pratt & Whitney is a first for those two companies, joint ventures are nothing new in the aero engine manufacturing sector. The cost of developing new engines is high and

manufacturers have looked for ways of spreading the risk for years.

GE and Snecma of France are long-standing partners. Rolls-Royce and Pratt & Whitney are already partners in International Aero Engines which makes the V2500 jet. Rolls-Royce has a joint venture with BMW of Germany.

Mr Green says: "By consolidating, the aircraft manufacturers are catching up with where the aero engine business already is."

# A WORLDWIDE PRESENCE

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Airlines by Michael Skapinker

# Partnerships offer protection

Carriers are striking alliances to reduce costs in line with falling prices

The world's airlines have never been as profitable as they are today. That, however, is not saying much in an industry which spent the first part of the 1990s hamstringing cash.

The International Air Transport Association said its members made record net profits last year of \$5.2bn on their international scheduled services. But total profits in the three years 1994-96 represent only 85 per cent of the airlines' total losses in the previous three years.

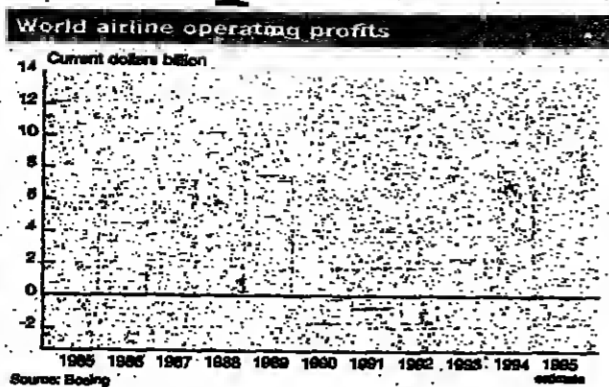
Even while they register improved profits, the more far-sighted airlines are preparing for the next downturn. On the same day in May that British Airways announced full-year pre-tax profits of \$285m (\$90m), it said it would have to find \$1bn of savings over the next three years.

The difficulty for the airlines is that however profitable they are now, they know that the pressure on prices is downwards. Although aircraft occupancy is at record levels, the long-term trend shows that air fares have been falling for decades.

Boeing, the US aircraft manufacturer, says passenger yields - the amount of money an airline receives for each mile it carries a passenger - fell 3 per cent a year throughout the 1990s. Since then, the annual decline has been a little over 1 per cent. Boeing expects this rate of decline to continue for the next 15 years.

Partly in response airlines have begun to set up alliances with the aim of linking their flight networks. This means they can increase aircraft occupancy by feeding passengers on to each other's flights.

Another incentive for forming these partnerships is the restrictive nature of air services agreements between countries since the second world war. These



have made it difficult, for example, for US airlines to fly from European airports to third countries. They have also made it impossible for European or Asian airlines to fly within the US.

By forming alliances across the Atlantic US airlines have been able to transfer their passengers to European carriers which have the right to fly elsewhere in the world. European airlines which fly to large US cities can offer their customers flights on their US partners to smaller American destinations.

Lufthansa of Germany has formed an alliance with United Airlines of the US. Delta Air Lines of the US has an alliance with Swissair, Sabena of Belgium and Austrian Airlines. But the

biggest and most controversial alliance of all was announced earlier this year between British Airways and American Airlines.

The two carriers are among the leading airlines in the world. BA was the world's busiest international airline last year, measured by the number of scheduled passenger kilometres performed, according to IATA figures. American Airlines flew more passenger kilometres within the US than any other carrier last year.

The alliance will give the two airlines the ability to fly large numbers of passengers across the Atlantic. Those flying to the US will then be able to transfer to the biggest of the US domestic networks. Those travelling to the UK will have the oppor-

tunity to fly from London to BA's impressive selection of long-haul destinations.

BA and American intend to put both their flight codes on all their transatlantic flights, regardless of which airline is operating the flight. They will also share the revenues from their transatlantic operations.

BA and American are not the only ones who can see the advantages of such a set-up. Their rivals can too - and they do not like it. They point out that BA and American will account for 60 per cent of all flights between the US and the UK, the busiest long-haul routes in the world.

USAir, in which BA has a 24.6 per cent stake, has taken legal action against the BA-American alliance, saying it is anti-competitive. USAir has also applied to the US authorities to fly to the UK in competition with BA.

In return for US government approval of the alliance, the UK has offered to conclude an "open skies" agreement with the US. However, differences in interpretation have made for difficult negotiations between the two countries.

The US and Germany concluded an open skies deal earlier this year. At the same time, Lufthansa and United were granted anti-trust immunity by the US

authorities, allowing them to co-ordinate their operations more closely.

Other US airlines have said, however, that an open skies agreement is insufficient. It will not, they claim, solve their biggest problem in the UK - obtaining slots and facilities at London's Heathrow airport.

For the aircraft manufacturers, alliances have the disadvantage that airlines can reduce the number of aircraft they use by combining services. For example, BA says its alliance with Qantas of Australia means it

## Far-sighted airlines are preparing for the next downturn

can use one Boeing 747 fewer on the UK-Australia route.

This sort of saving is unlikely to be a significant setback for the aircraft manufacturers, however, as the growth of air travel will mean airlines ordering new aircraft for other routes.

In addition, airlines in alliances are likely to want aircraft with similar interiors. The resulting move towards standardisation will cut aircraft makers' costs.

What the alliances mean for air travellers is more contentious. Mr Ian Hamer, chairman of the Air Transport Users Council of the UK says the increasing concentration of the airline industry gives his organisation "growing cause for concern". He says: "The council has seen little evidence of increased competition."

BA and American insist that their alliance will result in fares going down. Critics say the idea that the combination of two of the most powerful forces in an industry will result in prices falling flies in the face of established economic theory. But as the trend of airline fares is downward anyway, it is likely that the new alliances will be able to do little more than slow the long-term fall in prices.

PROFILE Boeing

# Bottom line now rules

Aircraft enthusiasts have given way to businessmen at the top of airlines

Looking back on his years in the aerospace industry, Mr Frank Stronitz, the outgoing chairman of Boeing, says the most noticeable change in his customers, the airlines, is that they are now run by businessmen.

In the old days, they were run by aircraft enthusiasts, he says. There was one large airline which insisted that the switches in its aircraft move in the opposite direction from those of all other carriers.

Mr Stronitz, who expects to step down from Boeing in the next few months, says airlines today are run with an eye on the bottom line. Airlines want aircraft at low prices and are prepared to accept a higher degree of standardisation.

During his years at the head of Boeing, Mr Stronitz, who became chief executive in 1986 and chairman in 1988, has attempted to get Boeing to pay greater attention to the competitive environment in which it operates. He regards launching the process of changing Boeing's culture as one of the most significant achievements of his time as the head of the world's largest aircraft manufacturer.

He told his senior executives to look at how many companies which were once world leaders were no longer around. He said that Boeing had to become more market-oriented, improve its manufacturing processes and persuade its shop floor employees to contribute to the process.

One of the difficulties he faced was that there did not seem to be an obvious threat to Boeing. "That made it much more difficult to do what we did," he says. "It was initially a tough sell. But then the



Philip Condit: the seventh head of Boeing since 1915



Frank Stronitz: airlines went aircraft at low prices

recession hit us and I don't think there were any naysayers about."

At the start of the recession in the early 1990s, Boeing sent its senior managers to Japan where they visited companies in other industries. These included Hitachi, the electronics group, Toyota, the car company, and Ricoh, the office equipment maker.

As a result of these visits, Boeing set itself the task of halving the amount of time between an airline placing an order and an aircraft being delivered. The company says it is now about halfway towards that goal.

The recession in the aircraft industry now appears to be over. Boeing's orders are up and it has increased its aircraft output. But the aircraft industry is a cyclical one. There will eventually be another downturn and Boeing will have to continue cost cutting if it is to compete.

Completing the task will be the job of Mr Philip Condit, who in April became Boeing's chief executive. He is only the seventh head of Boeing since it was founded in 1915.

Mr Condit headed the programme which created the Boeing 777, the company's most recent product, a twin-engine wide-body jet capable of carrying up to 400 people.

He will be in charge during the company's next large project - the creation of a stretched version of the Boeing 747. The extended 747 will carry over 500 people on two decks.

Several airlines have already expressed an interest in the aircraft. British Airways, Singapore Airlines, Virgin Atlantic of the UK and Lufthansa of Germany have said they may buy the aircraft.

Michael Skapinker

Experiencing turbulence: British Airways' deal with American Airlines has caused controversy

## Four European nations, one unbeatable defence solution.

Eurofighter 2000 is a single seat air superiority fighter designed to outclass all known adversaries. Yet it hasn't been created by a country flying solo. It's been created by four NATO partners. Which, in turn, involves over 400 companies and will employ more than 150,000 people working at the frontiers of knowledge. Like all aerospace programmes, it's vast, complex and technologically demanding. Once again, the route to success has been the approach we've always championed: teamwork.

Appearing at Farnborough International



BRITISH AIRWAYS

4 AEROSPACE

■ Airports: by Roger Bray

# Big birds need big nests

Operators will have to make a large investment to cater for super jumbos

The world's airport owners might, at first glance, appear to be sitting pretty. As environmental lobbying increasingly hampers expansion, demand for air travel threatens to soar far beyond supply. All they have to do is watch the money roll in.

It is not that simple. Airports have a critical mass, below which their operators dare not slip. If rivals develop while they stand still, airlines may be forced to abandon connecting flights for want of sufficient traffic - and business may fall away drastically.

But how can they expand? Runways are saturated with traffic. Building new ones means knocking down houses. And greenfield sites are as elusive as the Cheshire Cat.

The answer is bigger aircraft. Their average size is already increasing. Recent figures from Airports Council International for the first three months of 1996 showed that in each of the world's main regions passenger traffic growth far outstripped the average rise in the number of take-offs and landings. Size will increase even more dramatically when the coming generation of "super jumbos", planned by Boeing and Airbus and carrying 600 or more passengers, enters airline service early next century.

But airport managements cannot simply relax and wait

for that to happen. To accommodate such giants, estimates ACI, they will have to spend over \$100m on modifications. The benefits of greater seating capacity will be reduced unless flights are turned round more rapidly at terminals. If the new aircraft emerge as double deckers, it is possible that air bridges used for boarding and disembarkation at terminals will have to be built on two levels. Parking stands and taxiways will need to be widened and additional baggage handling and security equipment installed to cope with huge, simultaneous surges in traffic.

BAA, which owns London's Heathrow, is fortunate that it is planning a fifth passenger terminal just as the super jumbo promises to become a reality. If approved, the £1.5bn (\$2.3bn) project will expand the airport's capacity by some 30m passengers a year.

The company claims that increasing use of bigger, existing jets, will make that possible with or without the very large aircraft now proposed. But the timing of its development will allow it to accommodate them. This does not mean that other parts of the airport will escape upheaval, however. The greater wingspan of the super jumbos will force a reduction in the total number of stands at existing terminals.

Ms Alison Livesley, a senior BAA planner, says: "We are planning on the basis that there will be a new large aircraft or a derivative of the 747-400. The most important factor is wingspan. The length of the

aircraft must also be taken into account when we plan the depth of stands, but it is the distance from wing-tip to wing-tip that we must be most aware of. That measurement could be anything from the present maximum of 65 metres to 90 metres."

She adds: "All our European competitors are either already able to handle wingspans up to 80 metres or have a strategy to get them there."

BAA has begun work to the east of Heathrow's central terminal area, widening taxiways as well as stands. But the cost of such changes will amount to only around 20 per cent of the estimated sum of \$500m airports will have to spend over the next two decades to cope with worldwide traffic growth averaging around 5 per cent a year.

Even if they do manage to keep up, it will be a frantic scramble. The Association of European Airlines, whose members include most of the region's largest carriers, forecasts that, within ten years, Europe's airports will be handling 600m more passengers and 7m more flights - increases which would far outstrip any current plans to expand capacity.

Those plans include a third big airport close to Paris, the provision of more terminal space - and perhaps a fifth runway - at Amsterdam's Schiphol - a new \$2.6bn airport outside Athens, a \$2.9bn expansion programme at Rome's Fiumicino and the development of Schönefeld to cope with increased travel generated by the re-establishment of Berlin as Germany's capital.

The transformation of eastern Europe will create increased demand for air travel, and with it the need to update airports. Expansion and refurbishment projects have been launched in Moscow, for example. Germany has agreed to provide around \$34m to upgrade the outdated Rinas Airport in the Albanian capital, Tirana.

In the US eight big airports have launched projects worth a total of some \$3bn. They include New York's JFK and Boston's Logan, both of which are planning to link terminals with "people mover" trains, and Seattle, which needs an extra runway to save airlines expensive diversions to Portland, Oregon when fog hits landings.

South Africa's state-owned airports operation plans to spend some \$765m over the next three years to increase capacity.

But it is in the Asia-Pacific region, where traffic is growing fastest of all, that the most spectacular projects are under way. Hong Kong is forging ahead with the development of a replacement for Kai Tak on the island of Chek Lap Kok at a cost, including transport links, of some \$20bn. Neighbouring Macau recently opened a new \$1bn-plus airport. Seoul, which saw passenger traffic soar by 14 per cent last year is also undergoing huge expansion. And China, where air travel is growing by around 20 per cent a year, plans to spend over \$3bn to triple its airport capacity by 2000.

Japan is the biggest spender. A five-year plan drawn up by the Transport



Masses on the move: expected passenger growth significantly outstrips the capacity increases planned by airport operators. Paul Murphy

■ Air traffic control: by Michael Skapinker

# Computers help plot safer courses

Flight crew and ground control will soon have to communicate by computer

At the air traffic control centre at West Drayton, near London's Heathrow airport, controllers chatter incessantly. Not to each other - they are far too busy for that - but to the aircraft above one of the busiest pieces of airspace in the world.

To an outsider, much of the radio talk is incomprehensible; the clipped replies of the pilots, many of whom speak English as a second language, even more so. The two sides understand each other well enough, however, to deal safely with the 1.5m flights crossing England and Wales each year.

But the world of the air traffic controller is changing. With the number of passengers a year expected to double to 2bn over the next two decades and the number of aircraft expected to grow commensurately, the radio is looking like an increasingly inadequate means of communication. For this reason, air traffic control organisations on both sides of the Atlantic are developing new systems that will allow more of the communication between ground and air to take place by computer.

As well as reducing the amount of talking that has to be done over the radio, this should diminish the possibility of misunderstandings due to language differences.

In the US, airlines, aircraft manufacturers and aviation organisations are working on Future Air Navigation Systems (FANS). These use telecommunications and computer systems to enable air traffic controllers and pilots to exchange data without speaking to one another. If, for example, severe weather means an aircraft would be better off flying on a different route, air traffic controllers would transmit this information to the crew electronically.

Another huge advantage of FANS is that aircraft plot their routes by satellite. Instead of using radar to determine position, FANS planes use the Global Positioning System (GPS), a network of 24 satellites set up

by the US military. Since many countries do not have radar coverage outside large cities and travel over stretches of ocean is not covered by radar, the benefits of the GPS system are clear. When aircraft come into radar control after a transatlantic flight, they currently sometimes discover that they have miscalculated their position by up to five miles.

Satellite assisted navigation would also allow airlines to cut their journey times, making substantial savings in fuel. Currently, aircraft have to fly along designated routes, which are not necessarily the shortest ones. British Airways says that if it was able to fly the shortest route between London and Hong Kong, it could reduce the journey time by an hour.

The European system for computer-based communication between ground control and flight crew is called the

**Transatlantic pilots often misjudge their positions by up to five miles**

Programme for Harmonised Air Traffic Management Research in Eurocontrol, or Phare.

The programme, which began at the end of the 1980s and which is expected to run for another two years, is led by Eurocontrol, a 21-country organisation that helps to co-ordinate European air traffic control, and air traffic control organisations in France, Germany, the Netherlands and the UK.

Phare shares several features with the work being done in the US. The communications philosophy is the same: encouraging communication by data rather than voice.

A 32-year old Bac 1-11 aircraft is being used to test many of the systems that the Phare researchers believe will be common in the 21st century. The aircraft boasts an experimental flight management system that can generate a "four dimensional" flight path. Aircraft today can predict their flight paths in three dimensions - latitude, longitude and altitude. The

fourth dimension, provided by the new flight management system is time: the system can predict when an aircraft is going to reach its destination.

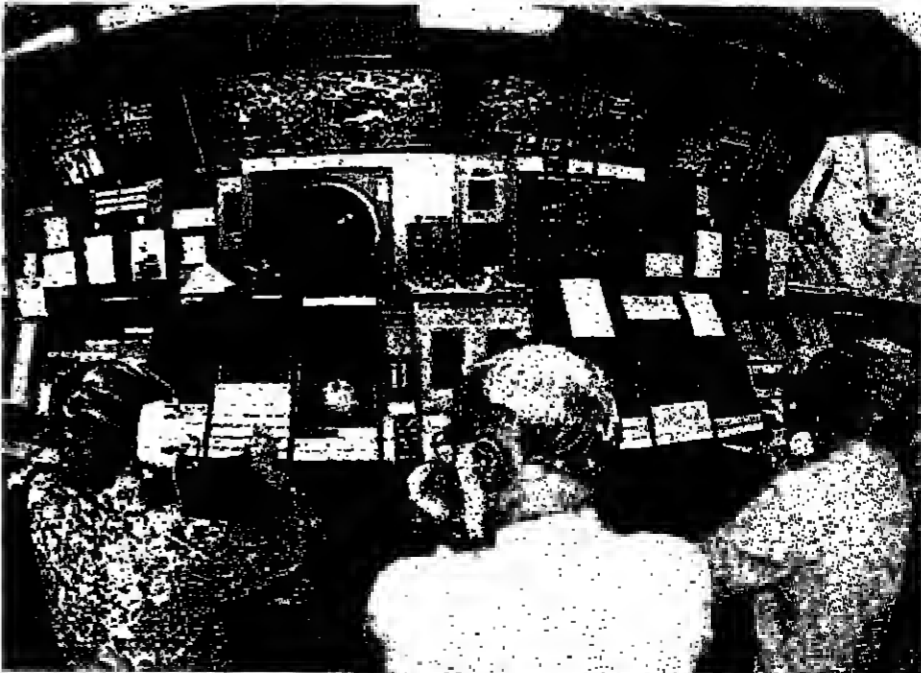
Under the Phare programme, these predicted flight trajectories are sent to ground control via a data link. Ground controllers then use their system to see whether there is any danger of the aircraft's planned trajectory coming into conflict with that of any other flight.

Various software tools allow the controllers to determine a safe flight path for their aircraft. There is a conflict probe, which is the tool that determines whether two flight trajectories will clash; there is a problem solver, which offers the aircraft an alternative trajectory if there is a conflict; and there is a flight path monitor, which tells air traffic control if an aircraft has deviated from its agreed route.

If it does appear that aircraft flight trajectories might be incompatible, air traffic control transmits the obstacle-by-data link to the aircraft. The flight crew then generates an alternative flight plan by entering the new data into a touch screen. The pilot also enters data such as remaining fuel.

If the new trajectory is within the aircraft's capabilities, the pilots transmit it back to air traffic control. The first phase of the Phare project, which looks at how the systems perform during flight, is being supervised by the National Air Traffic Services in the UK. The next phase will be managed by German researchers, who will examine how the technology works during take-off and landing at airports. Finally, French and Dutch air traffic controllers will integrate the work of the first two phases.

Some aviation industry observers believe that these programmes will be insufficient to solve the airline congestion problems of the next century. What is the point, they argue, of increasing air traffic controllers' productivity and allowing them to handle many more aircraft than they do today, if runway and airport space remain limited? Airports and runways can be more intensively used, but, particularly in Europe, airports will eventually be full.



Talk radio: in future controllers are likely to communicate digitally rather than verbally. Ashley Adams

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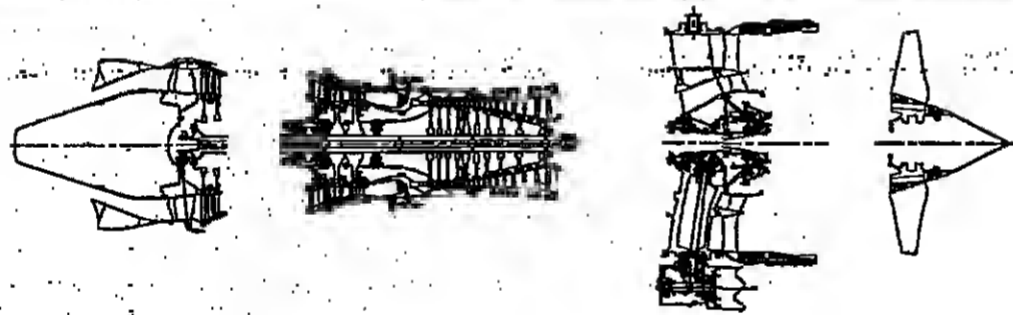
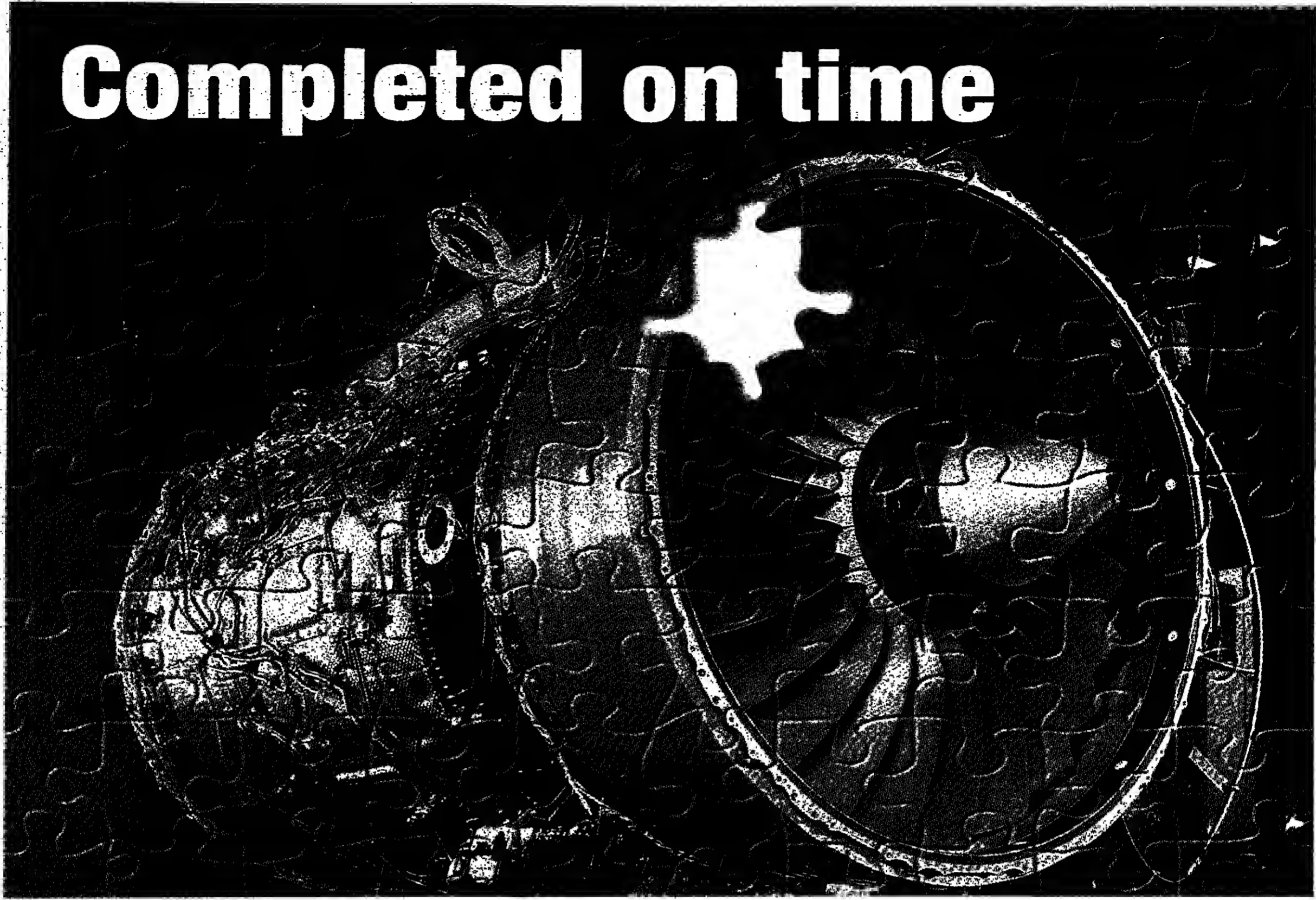
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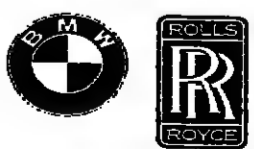
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## 8 AEROSPACE

Europe by Roger Bray

## Chocks away in the EU

Low-cost operators are keener to exploit liberalisation than big carriers

Europe's airlines are about to escape from the last remaining shackles of protectionism. To those free marketers who have been forced to swallow their frustration during two decades of painfully slow progress, it may seem a minor miracle.

From next April, carriers in the European Union will be allowed to operate unfettered domestic flights in other member states, opening new opportunities for low-fare travel. British and Dutch officials, in particular, may allow themselves a quiet moment of celebration, for it was their governments that blazed the trail, signing a liberal bilateral agreement in 1984. They may also reflect that response to liberalisation thus far has a whiff of Kafka about it, for the door has been pushed open but many airlines appear too timid to step through it.

The first package of liberalisation measures took effect as long ago as 1987, allowing any number of airlines to compete on routes within the European Community and overriding the insistence of some states that their flag carriers be guaranteed 50 per cent of the market.

The second wave of measures made little impact compared with the third package, which came into force with the single European market at the start of 1993. It gave airlines access to almost all international routes within the EU.

Big carriers, however, have scarcely taken advantage of the changes. The Association of European Airlines says that last year not one of its 26 members - they include most of the continent's leading carriers - had availed themselves of the new freedom. Developments resulting from the package continued to be patchy, it said. "This is obviously an indication of the difficulties in identifying new opportu-



Richard Branson: a new entrant to low-cost EU flying. Ashley Ashwood

nities and successfully penetrating unfamiliar markets." But smaller airlines are proving nimble. Low cost operators, on the pattern of Southwest Airlines in the US, are rapidly establishing a web of new routes with scant regard for national boundaries. They include Brussels-based Virgin Express, Debonair in the UK, and Ireland's Ryanair.

Virgin Express is the new name for Euro Belgian Airlines, acquired this year by entrepreneur Richard Branson. As the Farnborough Air Show gets under way on Monday, it will launch services between Rome and Madrid.

Debonair already flies between Munich and Barcelona. It also operates between Dusseldorf and Munich, though at present it is allowed to sell only a proportion of seats on each flight to domestic travellers. Ryanair's operation between London and Scotland is similarly restricted. In April, however, those restrictions will be lifted.

One of the main reasons why many airlines, rather than large, established carriers, are benefiting from the third package is a continuing scarcity of slots at Europe's busiest airports. Flag carriers remain reluctant to split their operations. The low-cost newcomers are less devoted to interlining

decided to use Ciampino in Rome rather than Fiumicino, partly because it is more pleasant and less crowded - but also because we could get better take off and landing times there. That choice was made possible by the fact that our operation is not dependent on interlining traffic."

Debonair has based itself at London's Luton Airport, best known as a jumping-off point for charters, and its destination airports include Manbengladbach, which is known as Dusseldorf Express and is an alternative to Dusseldorf's principal airport. Another new, low-cost operator, easyJet, has also chosen Luton as its hub. And while Ryanair also flies from Gatwick, most of its UK operations are from London Stansted and a range of provincial airports.

Like their US counterparts, these airlines generally offer minimal in-flight catering and easyJet takes only direct reservations. But some observers doubt that they will experience the same phenomenal expansion. Between 1988 and 1995 in the US, passenger numbers in markets served by low-cost operators tripled to more than 100m, while they fell elsewhere.

Pressure on airport capacity is not the only reason such explosive growth is unlikely here. The higher cost of operating in Europe - including bigger fuel bills - makes it more difficult to compete with rail and road travel.

But at least Europe's low-cost carriers can look forward to wider horizons. Liberalisation has put pressure on non-EU Governments around the Mediterranean to follow suit.

Earlier this year the AEA said it would like countries such as Tunisia and Israel to join a "Euro-Mediterranean free trade area". Airline operating costs in Europe are higher than in the US. But if the American experience is any kind of guide, the passenger will benefit. In the US, low-cost carriers have dragged down the overall cost of flying by up to 40 per cent.

A spokesman says: "We

PROFILE McDonnell Douglas

## Dispirited of St Louis

If Boeing is the unchallenged belle of the aerospace ball, McDonnell Douglas is something of a wallflower.

The Seattle-based world industry leader waited off with a deal to take over \$3.2bn-worth of Rockwell space and defence assets earlier this month, leaving its St Louis rival still partnerless.

Reports swiftly surfaced that McDonnell was negotiating with Raytheon, a group strengthened by last year's purchase of E-Systems defence electronics and the more recent acquisition of complementary operations from Chrysler.

But just as McDonnell had refused to discuss earlier talks with Boeing and Rockwell - or indeed its involvement in any of the merger manoeuvres that have shaken out the US industry in the past three years - the company remained silent and, outwardly, calm.

Mr Harry Stonecipher, chief executive, emerged briefly from purdah earlier this month to announce that he was in the market to buy. He had the financing capacity for a deal worth "\$5bn or \$6bn". He was especially interested in communications, avionics and missiles, and he had no intention of selling any assets, he added.

Despite the conventional wisdom that in an era of shrinking defence budgets, sheer scale is the *sine qua non* for suppliers, he pointed out that McDonnell's relatively modest interests in missiles and helicopters, for example, were "very profitable".

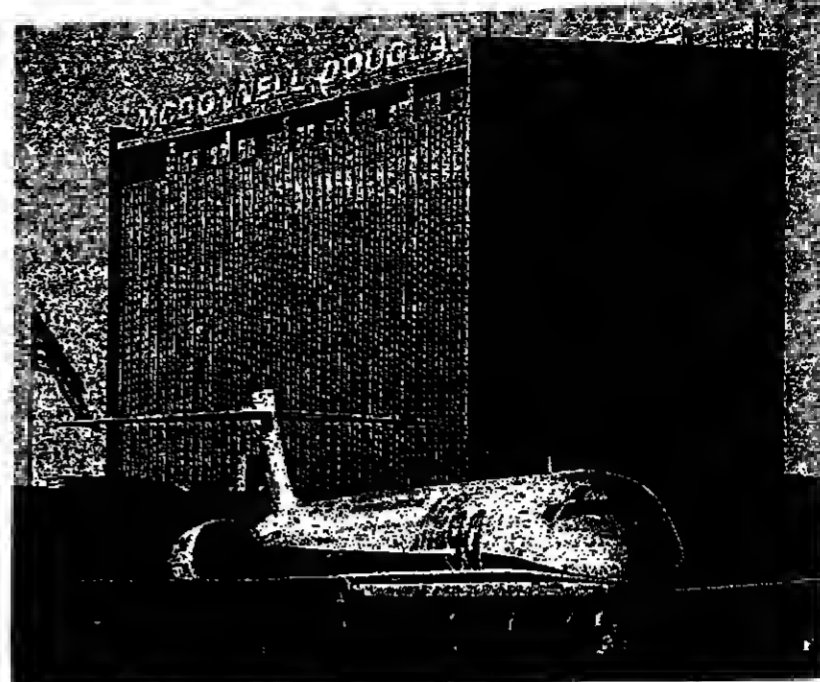
Cost-cutting and restructuring measures introduced by Mr Stonecipher since he took charge two years ago have improved

profitability, but key issues facing the group have yet to be resolved.

McDonnell remains the largest and most successful US supplier of military aircraft, but its status and competitiveness in other sectors have suffered in the shake-out prompted by recession and the end of the arms race. By virtue of its acquisition of Martin Marietta and the more recent purchase of Loral, Lockheed is now the biggest US defence industry supplier.

Its status was underlined in July when Washington awarded the group a contract worth almost \$1bn to build a prototype, reusable new-generation space shuttle, dashing the ambitions of McDonnell and Rockwell.

Meanwhile, Douglas, McDonnell's \$1bn-sales commercial aircraft division, has tumbled to an undistinguished third place in the



Grounded: the commercial aircraft side has fallen to third place in world rankings

world rankings, lagging further behind Boeing and overtaken by Europe's Airbus Industrie, with a market share of some 10 per cent, compared with 22 per cent when recession struck at the turn of the decade. Douglas delivered 50 aircraft last year compared with 169 in 1991 while its workforce was slashed from 36,000 to 11,000.

It was this decline that spurred talks on a possible link with Boeing earlier this year, and which continues to threaten the group's future in jetliner manufacture.

Douglas is scrambling to keep aloft its newest commercial aircraft, the 100-seat MD-95, whose projected launch customer, ValuJet, was forced to suspend operations earlier this summer after a crash in the Florida Everglades. Although the low-cost operator is expected to resume flying shortly, prospects for its future - and that of the \$1bn order - remain clouded.

The company, which last year saw its original MD-95 launch customer - Scandinavian Airlines System - turn instead to Boeing's 737, has lobbied hard in Washington to have ValuJet cleared. It is also hot in pursuit of new orders from Northwest and Continental, both long-time operators of DC-9 aircraft dating from Douglas's happier past.

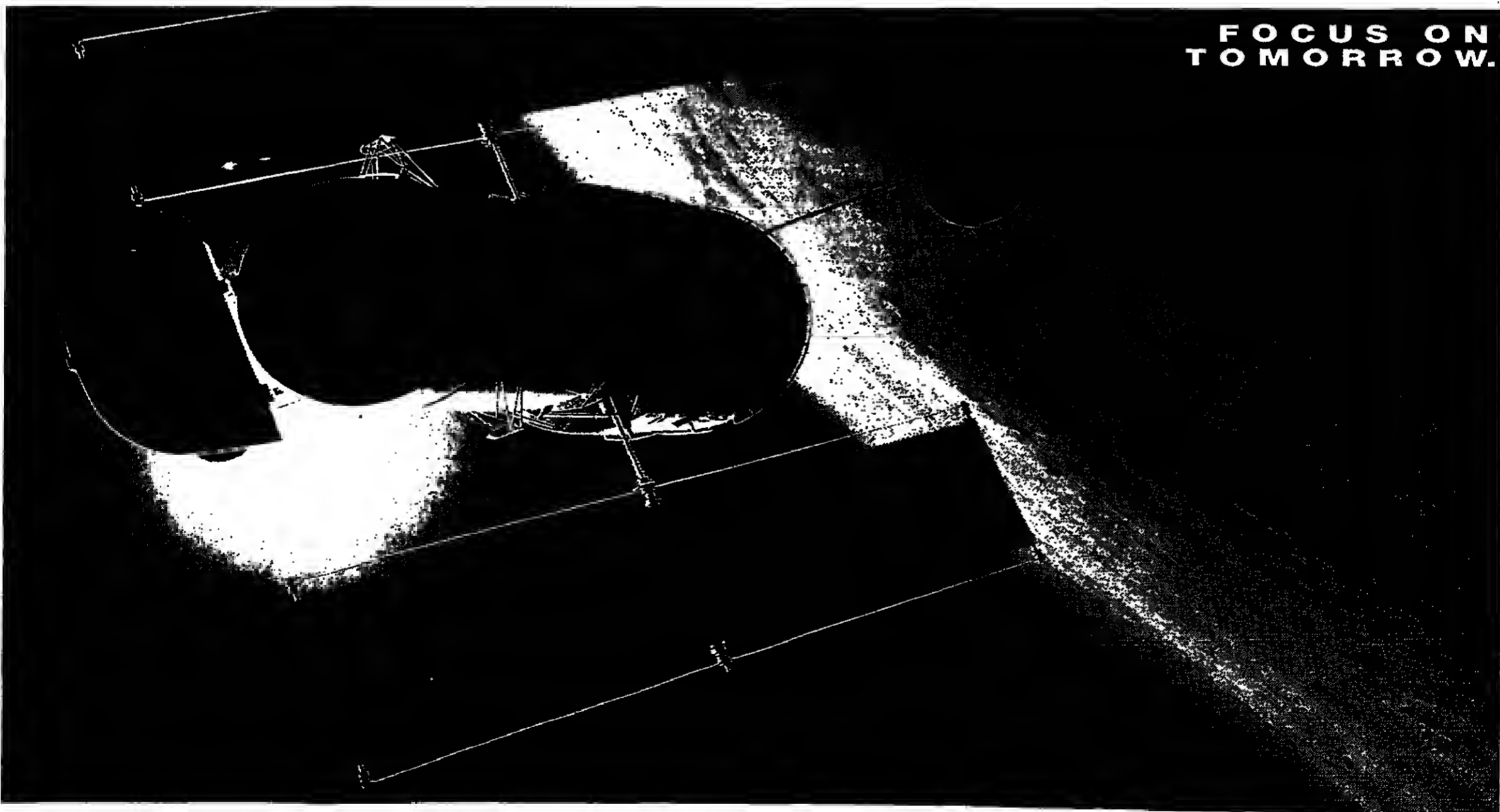
But if the operation's prospects of a happier future depend partly on reclaiming ground and confidence lost by the misconceived MD-11 and the troubled MD-95, they depend even more on the military divisions' ability to continue generating profits to finance recovery.

One potential source is the grand prize available to the winners of the current Pentagon competition for the Joint Advanced Strike Technology fighter project which, including foreign sales, spares and training contracts, could be worth up to \$750m over the aircraft's life.

McDonnell, in partnership with British Aerospace and Northrop Grumman, is confronting two other groups - one led by Lockheed and the other by Boeing.

The field is due to be trimmed to two in October shortly before the presidential election. By then McDonnell Douglas may well have found itself a defence industry acquisition big enough to put it on an even footing with Lockheed. And if Boeing's relative lack of military expertise tells against it, as some observers suggest, the run-off will establish unequivocally which of the remaining rivals can lay claim to the title of Top Gun.

Christopher Parkes



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PROFILE Airbus

# Four into one will go

On a July afternoon in Paris the supervisory board of Airbus Industrie put an end to a debate which had preoccupied Europe's aircraft makers for years. Airbus, the board said, would become a company.

To casual observers of the aerospace industry the news must have seemed puzzling. What has Airbus been doing during the 26 years of its existence if not a company?

The answer is that it has been a federation of four of Europe's leading aerospace manufacturers, which makes decisions, and aircraft, on the basis of consensus. As a *Groupeement d'Interet Economique*, a French legal construct, Airbus makes no profits or losses. These accrue to the companies which own Airbus: Aerospatiale of France and Daimler-Benz Aerospace (Dasa) of Germany, each of which own 37.9 per cent; British Aerospace, which has 20 per cent; and Casa of Spain which has 4.2 per cent.

Several senior executives in these companies have been opposed to change: why, they asked, interfere with something which so obviously works? Airbus is the second biggest aircraft maker in the world after Boeing of the US. It has ensured that the four partner countries have remained at the leading edge of the aircraft business.

In the first half of this year, Airbus won 143 orders from 15 customers, more than it received in 1995. The consortium said this was a 37 per cent share of the world market for aircraft with more than 100 seats.

Airbus's biggest success recently was to win an order from China for 30 single-aisle A320 aircraft and three wide-bodied A340s. The order virtually doubled Airbus's market share in China, hitherto a Boeing preserve. It also recently won an order for 45 aircraft and 45 options from Gen-



A scale model of the Airbus A340 undergoes wind-tunnel testing

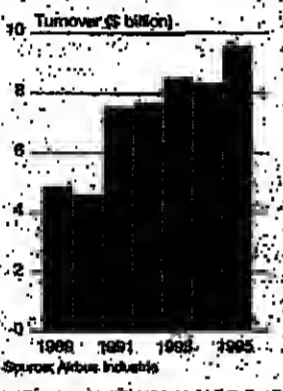
eral Electric Capital Aviation Services, the leasing arm of General Electric of the US.

For all its success, however, all four companies eventually had to accept that Airbus had to change. Not only was decision-making cumbersome but Airbus was also bound to award manufacturing contracts to its four partners in proportion to their shareholdings.

This meant that partner companies were doing manufacturing work which could have been done more cheaply by aerospace companies elsewhere - in Asia, for example. An early proponent of change was British Aerospace. This was unsurprising as the UK company had done more than the other partners to cut its costs.

Deciding to become a limited company, while a step

### Airbus Industrie



of great significance, was easier than the decisions which the four partners will have to make now. They have given themselves three years to decide what sort of company Airbus should become.

There are several alternatives. One would be for the partners to put all their Airbus manufacturing facilities into the new company. This would mean, however, that those facilities would have to be valued and the partner companies' shareholdings adjusted to take account of the results. This could mean British Aerospace winning a greater stake in Airbus at the expense of the other two large partners.

Apart from the discord this would cause, it would leave Airbus committed to using the manufacturing facilities it has at its disposal now, rather than having the ability to look for cheaper alternatives.

Another solution would be for Airbus to become a design and marketing company, which puts component manufacturing contracts out to competitive tender. This would have the advantage of enabling the new company to look for lower cost sources of supply. It would also avoid a damaging argument among the partners on what their relative shareholdings should be.

Michael Skapinker

China: by Tony Walker

# Calm before the returning storm

Beijing's plans for infrastructure mean Chinese activity is once again frenzied

China's aviation sector may have witnessed something of a slowdown since 1992-1995 when the country experienced an explosion of activity with the formation of more than a dozen regional airlines and dramatic increases in passenger and freight traffic but, after the consolidation of the past 12 months, the industry is set for another surge.

A freeze on the purchase of new aircraft is being lifted, negotiations are at an advanced stage for a project to build a 100-seater passenger aircraft, and China's ninth five-year plan (1996-2000) includes an ambitious programme for the construction of new airports and the upgrading of existing facilities.

China will also continue to be a leading purchaser of new aircraft as its national and regional airlines complete modernisation programmes. The \$1.5bn agreement signed in April for 30 Airbus aircraft, including 30 150-seater A320s, is part of this process.

The country also has an agreement pending with Boeing for some 20 new aircraft at a cost of between \$1bn-\$2bn. Political tensions between Washington and Beijing over such issues as Taiwan and trade, may have

stymied the deal for the time being, but Boeing remains confident.

The announcement in July that China had selected a European consortium for its planned 100-seater regional jet project represents a significant step towards the development of an indigenous aircraft industry. Negotiations with European partners are proving complex, however, and Beijing may be hard put to meet its timetable of having such a feeder aircraft up and flying within

Beijing is pushing ahead with ambitious plans to improve its airport network

five years.

China's aggressive pursuit of Airbus Industrie as a partner could prove something of a complication since it will require a renegotiation of the agreement reached with the European consortium, which includes Aerospatiale, British Aerospace and Alenia of Italy. Agreement with Airbus would mean that Daimler-Benz of Germany and Casa of Spain, both Airbus Industrie partners, would also be drawn into the project.

Beijing wants Airbus included so that the plane can be compatible with other elements of the Airbus fleet.

"We want the A-100 to share certain features with Airbus planes so as to benefit the end users," says an official of Aviation Industries of China (Avic), which is expected to take a 45-50 per cent share, with the Europeans and Singapore Technologies Aerospace holding 40 per cent and 10-15 per cent respectively.

Along with its plans for new aircraft purchases and the development of a home-grown aerospace sector, Beijing is pushing ahead with improvements to its airport network, which falls well short of the requirements of one of the world's fastest-growing markets.

China plans to spend Yn73bn (\$9bn) in the next five years on airports, including Yn9bn in 1996 - the first year of the ninth five-year plan. Beijing plans to "reconstruct" 40 of its 132 airports during the plan. High on the list of priorities is the upgrading of facilities in Beijing, where the terminal building designed for 5m passengers, is groaning under the burden of 13-15m passengers annually.

Work began last October on a new terminal with a capacity of 3m passengers a year. To be completed in 1999, it will cost between Yn7bn-8bn. China is also planning to relocate airports further from city areas, and build new ones. Guangzhou airport may be moved, and, in Shanghai, a new international airport is planned for the Pudong special economic zone on the east bank of



Infrequent fliers: China has only 400 commercial jets

Huangpu river.

Commercial air traffic, according to the Civil Aviation Administration of China's (CAAC) annual report, is expected to soar to 14bn tonne-kilometres by 2000, a doubling from the 7.1bn tonne-kilometres and 51.1m passengers of 1995. That anticipates a slower annual growth rate in traffic of about 15 per cent compared with the 22.3 per cent recorded in 1995.

But industry analysts say that for China's aviation sector to become more competitive internationally it will need to improve its aircraft utilisation rates - the mea-

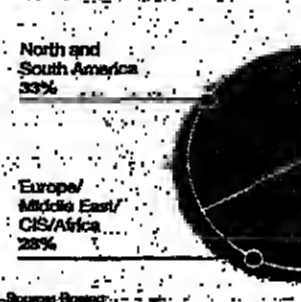
sure by which the industry gauges the efficiency of airline operators. Chinese utilisation at 5.3 hours per day in 1995 is about half that of Asia-Pacific airlines such as Qantas, the Australian carrier, whose rate is 11.

Boeing estimates that China's requirements, including those of Hong Kong, for new passenger aircraft in the next 15 years will be worth \$140bn, making it the third biggest aviation market in the world.

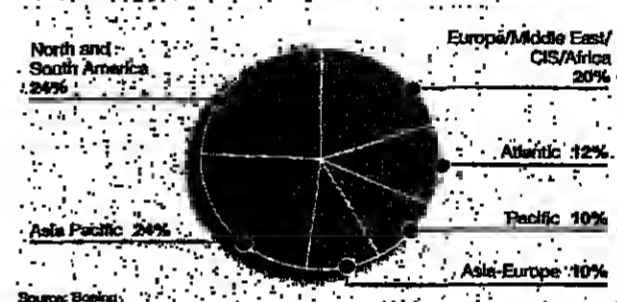
China has 400 commercial jets in service, of which about 200 are Boeings. Numbers of commercial aircraft are expected to rise to 640 by 2000, and to 800 by 2010.

An indication of the scope for further explosive growth in China's aviation sector is the fact that passenger usage rates by international standards are still extremely low. Air journeys in China are a minuscule 0.02 per cent compared with 2.5 per cent in the US. It is forecast that journeys per capita will rise to 0.2 per cent within 10 years. In China's aviation sector only the sky, it seems, is the limit.

### Share of world RPMs 1995



### Share of world traffic RPM growth 1996-2005



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10 AEROSPACE

■ Arianespace: by David Owen

# Launch flop is bad omen

Competition and a failed launch are troubling market leader Arianespace

June 4, 1996 was a black day for the European space industry. It was the morning the new Ariane 5 rocket exploded 40 seconds into its maiden flight from the European Space Agency's launch centre in French Guiana, throwing into doubt Europe's hard-won leadership of the \$3bn-a-year commercial space transport industry.

In the 16 years since it was incorporated, Arianespace, a France-based 53-company consortium, has grown into the world's leading satellite launcher, with about half of a market once dominated by the US. Twelve of the 23 commercial satellites launched in 1994 were propelled by Ariane launchers. Last year, the figure was 13 out of 26.

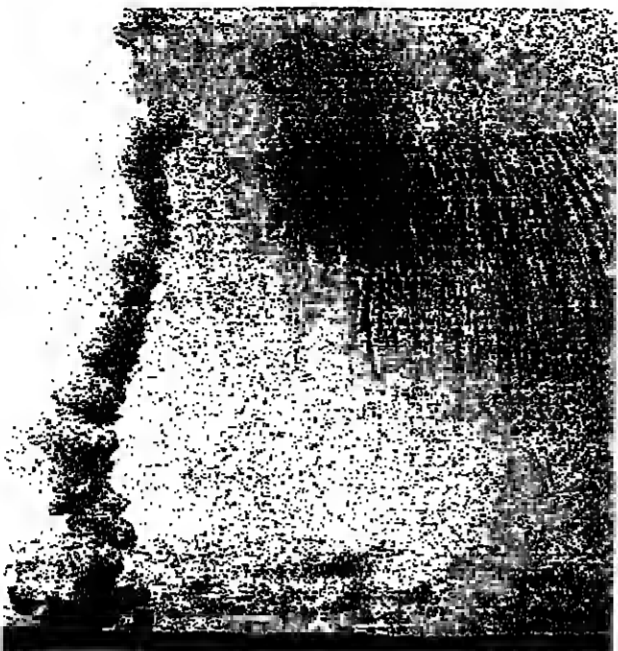
But now the US - and others - are threatening to hit back. Over the next few years, Arianespace will face increasing competition from a string of new challengers around the world. These competitors include:

- International Launch Services, a joint venture formed by Lockheed Martin, the US defence company, and two Russian groups, Khruichev Enterprise and RSC Energia.

Lockheed Martin makes the Atlas launcher, 11 of which were launched successfully from Florida last year. The Russian companies offer the larger Proton, which is launched in Kazakhstan and has been at the heart of the Russian (and Soviet) space programme for 30 years.

By joining forces, the new alliance hopes to market both launchers around the world.

- McDonnell Douglas, the US aerospace company, is developing the Delta III, a rocket similar in size to the Atlas, designed to carry twice the payload of its predecessor, the Delta II. The first launch is planned for 1998.



Ariane 5 exploded 40 seconds into its maiden flight. Picture: PA

- Boeing, the largest US aircraft maker, has teamed up with RSC Energia of Russia, Kvaerner of Norway and NPO Yuzhnoye of Ukraine in the innovative Sea Launch venture. This aims to launch satellites from a platform in international waters in the Pacific, with the first launch due in late 1997 or early 1998.

- Lockheed Martin is also developing a new rocket, the Atlas IIA, with a planned launch date of 1998.

With Chinese and Japanese satellite launchers also available, it is starting to look as though the market in years to come will be distinctly crowded.

Arianespace is relying on the Ariane 5 - developed at a cost of more than \$7bn - to retain its competitive edge into the next century. It believes the new rocket will offer improved reliability, the capacity to carry larger payloads and lower launch costs.

The ability to carry heavier payloads is vital to Arianespace as satellites become larger and more complex. When it eventually enters commercial service, the Ariane 5 should be capable of launching two satellites with a combined mass

of 5.9 tonnes (or one satellite weighing 5.8 tonnes) into geostationary orbit 22,000 miles above the equator. With the average telecoms satellite now weighing three tonnes, this capacity is crucial if the group is to continue launching two satellites at a time. Ariane 4, the rocket on which Arianespace's success in recent years has been founded, with its payload of 4.5 tonnes, is simply no longer big enough.

For small satellites needing to be placed in low orbits, meanwhile, Arianespace and Aerospatiale, the French aerospace group that acts as industrial architect for the Ariane launchers, recently agreed to set up a joint venture with two Russian partners - RKA, the Russian space agency, and Samara. To be known as Starstem, the venture will take charge of the commercial operation of Soyuz launch vehicles.

demand for new telecoms and TV services and the need to replace satellites put up in the 1980s. Early in the next century, however, some analysts predict a temporary decline in demand which could mean problems for the least reliable or cost-effective launchers.

Seen in this light, the findings of the independent inquiry board into the failure of the first Ariane 5 mission - disclosed at a July 23 press conference at the European Space Agency's headquarters in Paris - will have come as something of a relief.

As Mr Jean-Marie Luton, the ESA's director general, pointed out, the board's report said nothing to suggest that fundamental flaws in the system architecture of the rocket had contributed to the explosion. Rather, it called into question a management culture that appeared to assume that since a component - in this case the rocket's inertial reference system (or navigational guidance mechanism) - functioned perfectly when fitted to the Ariane 4, it would necessarily do likewise on the Ariane 5. This should be comparatively quick - and inexpensive - to put right.

Mr Luton put the cost of the failure at between FF800m and FF1.6bn, (\$157m to \$314m), 2.4 per cent of the already huge investment made in the rocket.

Since Arianespace officials say they do not yet know whether even the third Ariane 5 mission, let alone the second, will carry a commercial payload, the new launcher's entry into commercial service may be delayed many months beyond the January 1997 date the organisation had been planning on before the ill-fated maiden flight.

With so much competition looming, albeit in an expanding market, Europe's space industry - long regarded as an unmitigated, if expensive, success story - cannot afford another failure. The tension in the run-up to the second mission promises to be almost unbearable.

■ In-flight entertainment: by Aron Cohen

# Budgets hit stratosphere

Ever-choosier buyers are spending big sums on systems to amuse clients

In-flight entertainment is one of the most competitive battlegrounds in commercial aviation, as a recent writ from United Airlines proves. United is suing GEC-Marconi InFlight Systems for breach of contract, alleging that the in-flight entertainment system the avionics company provided for the carrier's new Boeing 777 airliner does not meet agreed specifications.

Meanwhile, Virgin Atlantic has announced that it is switching the order for its in-flight system from Hughes Avicom International to Matsushita for aircraft currently on order. Both airlines are disappointed that the system they originally chose has not delivered them interactive capabilities, such as arcade-style computer games and the ordering of duty-free goods.

Above all, they have not got their hands on what Mr Steve Harvey, managing director of software company Inflight Productions, describes as "the Holy Grail" of in-flight entertainment: video on demand. This allows passengers to watch films in their own time, starting and stopping them when they please. "It means that if you want to rewind because you fell asleep or pause because you want to visit the loo, you can," says Mr Harvey.

Airlines have been both promising and promised video on demand for almost five years. United trumpeted this facility as part of its pre-launch fanfare for the Boeing 777, which it introduced last summer. Virgin had hoped to offer an interactive system as long ago as 1993. The airlines are still plugging away at the idea, although Virgin manager of

in-flight entertainment Ms Lysette Gamma says it is a distant dream. "I think we are a good 18 months to two years off before we can offer it," she says.

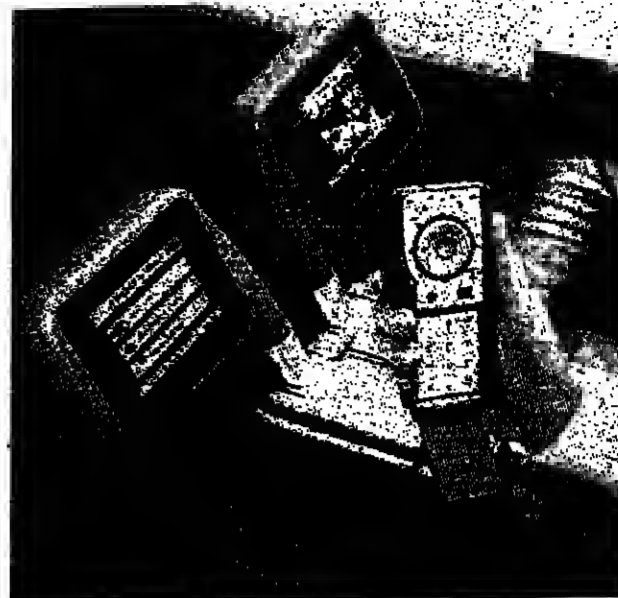
British Airways is a little more hopeful and was due to start trials on one of its aircraft earlier this month although it is not confident enough to state a likely launch date. The only carrier still prepared to stick its neck out is Singapore Airlines, which is holding to its claim earlier in the year that it would have video on demand by the end of 1996.

If SIA is true to its word, it will steal a march on rivals - and take everyone by surprise. "I give them about a 5 per cent chance of introducing video on demand this year and a 50 per cent chance next year," says a source at an avionics hardware company.

**The main problem seems to be finding a suitably rugged system**

The problem with video on demand is that it requires a wholly new technology. At present, on-board films are broadcast throughout the cabin from a central video player using cassettes. Video on demand is based on films being encoded digitally and stored on an individual PC in each passenger seat.

With fewer mechanical parts involved and no tapes to get chewed, that should theoretically make the process less liable to break down. The reality has been different. "It is proving a lot more complex than on the ground, though they can get it to work in laboratory conditions," says Mr Harvey. The main problems appear to be finding a suitably rugged system to withstand an aerial battering and com-



In-flight video systems are the focus of fierce competition

pressing the digital film files to a sufficiently small size.

While the avionics companies struggle to find a solution to these difficulties, the airlines are compromising by introducing interactive systems without video on demand. SIA, for instance, offers 22 channels of video entertainment, plus a selection of ten Nintendo games, 12 channels of audio and even a Reuters text news service, updated hourly.

New Virgin aircraft will have a similar offering from next February, minus the text service, but with a facility for gambling. So too, at an unspecified date, will BA, which also promises on-board shopping and reservations facilities.

The slowness of progress toward video on demand illustrates the growing importance of in-flight entertainment in airline strategy. As anyone who has sat through second-rate movies on an airliner knows, entertainment is often an afterthought.

Virgin Atlantic is widely credited with having galvanised the industry in the early 1990s. As a small airline, it could not offer a huge fleet and a frequent timetable, so its marketing efforts were concentrated on creative, award-winning programming and innovations such as Sony video Walkmen.

With most airlines flying the same aircraft and offering the same legroom, they now find that the best way

to differentiate their product from that of competitors is to offer superior entertainment. As a result, entertainment is one of the main airline marketing battlegrounds of the 1990s.

"In-flight entertainment budgets are going up and up," says Mr Steve Harvey of Inflight Productions, whose clients include Virgin, BA, SIA and Cathay Pacific. "For many years, they were in thousands of pounds, then they went into hundreds of thousands and now they are in millions."

This hyperinflation has led to a quest for better technology. "Airlines used to install technology which was fairly mature. Now what they are installing is at the front end of the market," says a source at a leading avionics company. "With intense pressure on them to build bigger and better systems, there was pressure on avionics companies to promise something they could not necessarily deliver."

Additional problems lie ahead. "Where are you going to get the space to cram all these functions into the seat?" asks the avionics source.

As the fretting over video on demand continues, the aviation industry is looking ahead to the next big development, which could be live television. Delta Air Lines plans to launch an experimental satellite link which would allow passengers to watch CNN and a variety of other television stations.

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صحة من الامل

PROFILE Harry Stonecipher of McDonnell Douglas

## Boss who appals unionists appeals to the Pentagon

Thirty years' experience of aerospace industry cycles, a politician's deftness, and armour-plating as stout as that under a fighter-pilot's behind are serving Mr Harry Stonecipher well.

The 60-year-old chief executive of McDonnell Douglas, who spent some 25 years in General Electric's jet engine division, had his first chance to demonstrate his qualities to a broader audience during a brief spell at defence supplier, Sandstrand.

Appointed chief executive in 1989, he moved quickly to settle damaging Defence Department claims of persistent over-charging and - earlier than most in the industry - cut the workforce by more than a quarter.

He renewed his communications with the Pentagon to good effect almost immediately on taking charge at McDonnell two years ago when the group's much-delayed C-17 transporter aircraft project appeared to be in a fatal stall.

Despite political and technical opposition, the C-17 has since accumulated federal orders worth about \$1.8bn for McDonnell, reinforcing the lifeline the group's military revenues provide for its troubled civil aviation business.

As for his armour-plating, it has shown no signs of being dented during a protracted stand-off with more than 6,000 striking engineering workers angered by the group's relentless search for cost-savings through out-sourcing component manufacture to cheaper suppliers.

Using temporary help and enlisting white-collar staff, production has been maintained at the affected St Louis factories, causing little apparent short-term damage. First quarter earnings rose 25 per cent

this year and the company has said it expects record results at least for the following two quarters.

The C-17 is reckoned to have saved some 20,000 direct and indirect jobs.

Despite being the first non-family member to run the group (he replaced Mr John McDonnell, Mr Stonecipher has adopted an almost proprietorial role in his efforts to set the group to rights. Apart from his intensive lobbying in Washington, he is reputed regularly to lead sales and marketing missions to



Harry Stonecipher: settled claims of over-charging

airline customers. He has rooted out entrenched management layers, especially in marketing, and promoted younger talent.

With rare exceptions, Mr Stonecipher has restructured group management from in-house resources. He has not hesitated, as his predecessors did, to switch executives between the group's mainly military base in St Louis to its Douglas division's civilian operations centre at Long Beach, California.

One of the first of his few reported opinions after joining the group was that the merger 30 years earlier of the McDonnell and Douglas companies had never actually been consummated. Task forces were set up to set matters to rights.

This integration process reached a logical peak earlier this year when Mr

Michael Sears, the 48-year-old head of McDonnell's Hornet fighter project, found himself shunted into one of the toughest positions in the industry: the president's office at Douglas Aircraft.

Although most of the blood-letting and job cuts were undertaken by his predecessor, Mr Sears says he must still somehow squeeze a further 5 per cent reduction in costs out of a business that has shrunk its workforce by more than two-thirds in five years.

But his main job, he agrees with analysts, is to persuade carriers that Douglas has a long-term future in the civil aviation business. "We need to be credible about our designs and credible about our business future," he said, recently.

In contrast with Douglas's recent history of decline, with a world market share down from 23 per cent in 1990 to some 10 per cent today, Mr Sears has a record of delivering aircraft on time and on budget.

That his F/A-18 Hornet aircraft is now in service in nine countries, in several different versions adapted to budget and service constraints, is testament enough for Mr Stonecipher who says Mr Sears's job is to "define the product line and sell some aircraft: it is really that simple".

Starting at the top of the line with the slow-selling MD-11 300-seater, Mr Sears's first move was to confirm through meetings with customers that the aircraft was too small and too limited in range for their needs.

The aircraft was a mistake which McDonnell Douglas's new management seems unlikely to repeat - even if it could afford to.

Christopher Parkes

The environment: by Michael Donne

## Noise still annoys the most

Expected growth in air travel will increase protests against aircraft disturbance

Over recent years, the commercial aviation industry worldwide has been facing increasing environmental pressures of all kinds. Although noise control is the most severe, many others are now also assuming greater significance, from the need to limit emissions on the ground and in the air (in particular oxides of nitrogen) through to the conservation of resources through improved fuel efficiency, and the reduction of waste of all kinds. By achieving improvements in all these operational areas the industry can not only demonstrate its avowed desire to be environmentally aware, but also significantly enhance its efficiency and profitability.

Much is being done in all these areas. Many airlines have set up their own environmental programmes. British Airways, for example, publishes an annual environmental report on its activities in the area. The International Air Transport Association (IATA) which represents 245 of the world's airlines, encourages its members to be environmentally active, and also produces a regular Environmental Review, while the World Travel and Tourism Council has established an environmental research centre and database at Oxford. Several airlines and aircraft and engine manufacturers are participating in active research programmes to determine the precise effects of aero-engine emissions in the upper atmosphere.

But the reduction of noise both in the air and on the ground remains the biggest environmental challenge. Forecasts indicate continued long-term expansion in air passenger and cargo volumes world-wide, in turn demanding additional aircraft and ground facilities. This means that the pressures to alleviate aviation



Site of sore ears: more traffic means more noise for those who live under flight paths

noise are likely to remain a major social as well as an environmental issue. The Association of European Airlines, representing 25 airlines, believes that environmental concerns could prove to be a third limiting factor on air transport growth, in addition to those of airport and airspace capacity.

Much has already been achieved. Aircraft manufacturers have improved their designs to enhance operational efficiency, while aero-engine makers have progressively improved the technology of gas-turbine engines to reduce noise levels, fuel consumption and emissions. The airlines have been required to invest heavily in these more modern, quieter and cleaner jet aircraft, to meet more stringent national rules imposed by many states following the recommendations made by the International Civil Aviation Organisation (ICAO), the aviation agency of the UN, in Annex 16 (dealing with

aircraft noise) of the Chicago Convention of 1944. The latest such recommendations, known as Chapter 3 Standards, were introduced 20 years ago and have been progressively implemented. In 1990, ICAO adopted a plan to phase out noisier aircraft. Because ICAO itself has no mandatory powers, it is up to individual member states to embody its recommendations in national laws: this is being done, for example, with a deadline of December 31, 1998, in the US, and April 1, 2002 in Europe.

Airlines have accepted operational constraints, through the introduction of noise abatement procedures on take-off and landing, with penalties for infringements, whilst approach and departure patterns are carefully designed to achieve as far as possible minimum noise disturbance over built-up areas. Furthermore, night noise curfews ranging from total bans to limited jet operations by quieter mod-

ern aircraft are imposed at many airports. This means that massive investments in facilities remain substantially unproductive for perhaps as much as six or seven hours of every working day.

Airport owners and operators throughout the world now accept that development plans now invariably have to pass through extensive public scrutiny before they can be implemented. This can take years. The current long-running public planning inquiry into Heathrow's proposed Terminal 5 is a classic example.

Over recent months, there has been debate on how much tougher aircraft noise controls should become in response to continued public pressure. A meeting of ICAO's Committee on Aviation Environmental Protection (CAEP/3) in December, 1995, while reaching agreement on tougher controls on emissions failed to achieve an agreement on tougher noise controls. While partici-

pating in the meeting the IATA considered there was no justification - on environmental, technical or economic grounds - for more stringent noise standards. It argued that member airlines were continuing to make substantial investments in the most technologically and environmentally advanced aircraft, and that further changes to the CAO parameters would put these at risk, with only minimal or uncertain environmental benefits.

This has put airport owners and operators in a difficult position, faced as they are with increasing local and even national pressures to become ever more environmentally responsive, whilst faced with ever increasing traffic volumes. The Airports Council International, which represents the owners and operators of some 1,200 airports world-wide, would have liked CAEP/3 to recommend greater stringency in noise regulations: it argues that there is some room left in current engine technology to permit this, and proved this at CAEP/3 using the manufacturers' own data.

But in the absence of any international agreement the onus has fallen on regional organisations such as the EU, individual governments or airport operators, who are now coming under increasing public pressure to impose tougher controls. This could lead to a proliferation of unco-ordinated initiatives which will hamper the ability of airports and airlines to expand, and generate high costs for the entire industry and travelling public.

The next CAEP meeting is some time ahead. Meanwhile operators are pressing governments for tougher land-use planning near airports, with more 'buffer zones' comprising either open space or industrial development, thereby limiting the proximity of residential areas. ACI, IATA and the manufacturers are all calling for greater governmental stringency, to protect the gains achieved by the phase-out of noisier aircraft from being offset by residential development.

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صحة من الامم

Missiles: by Bernard Gray

## UK puts faith in Europeans

The continent's guided weapon business has gained impetus as a result

Two decisions on cruise missiles have helped shape the course of the guided weapons industry on both sides of the Atlantic this summer. Britain's resolution to buy the British Aerospace-Matra Storm Shadow for its Conventionally Armed Stand-Off Missile (Casom) gave focus to consolidation of the missile industry in Europe. At the same time the selection of Lockheed Martin and McDonnell Douglas to compete for the Joint Air-to-Surface Stand-Off Missile (Jassm), raised the stakes for manufacturers in the US.

The British decision on Casom, and a parallel decision on an advanced air-launched anti-armour weapon, had been eagerly awaited by the industry. The result, which effectively cemented BAE's missiles joint venture with Matra, also firmly tipped the UK into the European missile camp. Attractive offers, particularly from McDonnell Douglas with a stealthy missile similar to its Jassm contender, which would have strengthened transatlantic ties, were ignored in favour of the European option.

In part, that was because the UK Ministry of Defence increasingly sees missiles as a key technology it wants to sway. Because missile production and operation will be crucial to war-fighting capability, the MoD wanted to have full control over the intellectual property in the missile, and to have an indigenous industry to produce it. To secure that, it had little option but to support the BAE-Matra team.

Similar considerations seem to have applied to the choice of GEC-Marconi's Brimstone missile in the anti-armour competition. While the missile is based on the Rockwell Hellfire anti-

tank weapon, the important technology is GEC's high-resolution radar seeker. Selecting Brimstone has solidified GEC-Marconi's position as Europe's leading infrared and radar seeker house, putting it in a good position to negotiate a pooling of its technology, possibly with the Matra-BAE team, later on.

By cementing BAE's ties to Matra the UK has helped create a pole around which the rest of the European guided weapons industry can consolidate. The pair are currently bidding for Thomson-CSF, the French state-owned defence electronics company; Thomson has missile technologies which would fit well with Matra-BAE Dynamics, as the new firm will be known. That could also bring in Shorts of Belfast, which has a missile joint venture with Thomson.

LFK, the missiles subsidiary of Daimler-Benz Aerospace, had been deep in discussions with Aerospatiale, but German armour for the link has cooled. LFK could now find a way into the BAE-Matra team, and the companies are already working together on the Future Medium Range Air-to-Air Missile (Fmraam), which will be the principal armament of Eurofighter. Saab is also involved in the Fmraam team, and already has links to BAE in its military aircraft division.

Even if the progress has been a gawotte rather than a quick-step, Europe's missile business is at last heading in a rational direction. If it can avoid nationalistic concerns and rationalise industry quickly, it could find itself well-endowed with products. The Fmraam will be capable of being fitted to most rails for Advanced Medium-Range Air-to-Air Missiles (Amraams) and of improving the performance of aircraft for long range air-to-air combat. It will be the first serious challenge to the dominance of Amraam in the world market since it was introduced. BAE's Asraam short-range weapon for



Cooled heat: GEC-Marconi's anti-armour Brimstone missile

Eurofighter could also be a good seller.

Matra's Storm Shadow and LFK's Taurus should both make good ground attack missiles, while BAE has the Alarm anti-radar station weapon. Europe also has technologies in anti-tank, anti-ship, air defence and guided bombs. Rationalised and properly marketed it could be capable of challenging the strongest of the US competitors.

Ironically, the situation for the US has become less clear in the past few months. Hughes' loss of the Jassm bid weakens the company's position in air-to-ground missiles, which it seemed to have taken a grip of when it bid aggressively to become sole supplier of Tomahawk cruise missiles to the US Navy. At the same time the company's world lead in radar guided long-range air combat missiles is likely to be challenged by a European Fmraam.

While Hughes has taken a knock McDonnell Douglas, which looked almost down and out after losing the Tomahawk bid, has bounced back. Its victory in the Jassm competition, and the award of the Joint Direct Attack Munition to fit guidance kits to "dumb" bombs, has put it back into the air-to-ground missile business in a big way. Lockheed Martin, which has spent time sorting through the mass of businesses it has brought together, has shown what its power can do in winning the other Jassm concept definition contract.

As a result, the US missile industry, which had seemed to be coalescing into three groups based on Hughes, Raytheon and Lockheed Martin, may now be opening out. It will also include

McDonnell and others such as Texas Instruments, which is leading the Joint Stand-Off Weapon programme.

For both Europe and the US, the important facet of the coming year will be the degree to which decisions taken on both sides of the Atlantic polarise the missile industry into two camps.

Europe has already taken decisions which effectively imply that it is not happy to be solely reliant on the US for its missile technology. For the UK to take such a decision is a remarkable step, and comes after the had experience of buying Amraams from the US government for Royal Navy Harriers, only to have trouble finding out how they worked.

The warning shot fired at the US this summer could provoke one of two reactions. If the US decides to retaliate by closing its market to European systems further, then transatlantic missile co-operation could start to break down. If it accepts the message of the contract awards - that it needs to make its markets and its technology available on a more reciprocal basis to its Nato allies - then the result could be an improvement in co-operation.

Having started with a scuffle over cruise missiles, this guided weapons rivalry will come to a head this year in the Blue Riband area of air-to-air systems. The US is evaluating replacements for its venerable Sidewinder short-range infrared guided missile, and is looking at the BAE Asraam on a parallel path. The UK meanwhile, is looking at the long range radar-guided weapon to arm the Eurofighter, which will pit a European consortium against Hughes' Amraam.

Nimrod: by Bernard Gray

## BAe wins partial victory

Rivals of the UK concern will help it build a new British marine patrol aircraft

This year's £2bn competition to supply replacement maritime patrol aircraft to take over from Britain's ageing Nimrods was as hard fought as any in recent memory. It may not have had the open aggression and high-profile advertising of the previous fights over buying transport aircraft and attack helicopters, but the struggle behind the scenes was just as tough.

There were plenty of financial and operational issues at stake, yet at the industrial core of Nimrod replacement there was a fundamental issue for the UK aerospace industry: which company controls the integration of complex systems on aircraft. British Aerospace or the General Electric Company?

The question seems to have been decisively in favour of BAE, with the award of the contract to its Nimrod 2000 refurbishment proposal. It is also a decision which speaks volumes about the recovery in BAE's finances, and the shift in the balance of power in the UK defence sector. Five years ago GEC was the company to prop up ailing BAE; now BAE is the organisation apparently trusted by the MoD to get the job done.

Nimrod seems to have confirmed BAE as the prime contractor and systems integrator for UK aircraft, but the result is not perhaps as black and white as the company would like. For a start, Boeing has a significant role in developing and integrating the weapons' command system, a job which is likely to cost anything up to £400m (\$620m), 20 per cent of the total programme cost.

Then there was the last minute fudge which saw GEC gain a substantial role in the missions systems and sensors for the aircraft; three different companies - BAE, GEC and Boeing - can now claim to be working on

the fashionable alchemy of systems integration on the new Nimrod.

Such uncertainty and confusion characterised the last few weeks of the competition, when tender and counter-tender went in so fast that even some of the contenders confessed that they no longer knew what the details of their own bid were. Some also suspect that the price cuts needed to win the deal were so deep that the Ministry of Defence's ambitious specification for the aircraft has been significantly cut back.

It will take some time for the details of the compromise between the three companies to be worked out. At this stage the best which can be said is that BAE's systems engineers at Warton will have oversight of a programme which will have twice as much computer code in its systems as it takes to run the Eurofighter. That will help the company bridge any gap for the workforce between the later stages of Eurofighter development and work on a Future Offensive Aircraft to replace the Tornados, or on the US Joint Strike Fighter.

Boeing will have a mission system developed which will leave it well placed once the US finally starts to think about what should replace its Orion aircraft. GEC will have pulled in valuable work for its avionics plant at Rochester and in Edinburgh.

For the other contractors supplying significant systems to the aircraft, matters are a little clearer, even though no contracts have been signed yet. And while the fuss is often made of the prime contractors, contracts

such as Nimrod are also vitally important to the rest of the aerospace industry.

Rolls-Royce has found a valuable new outlet for around 100 of its BR710 engines, developed as part of its small engine joint venture with BMW in a contract worth over £200m. The engines will actually be assembled at the venture's factory outside Berlin, but much of the interesting technologies on the system, such as the aero-foils and blades, come from Rolls' plants in the UK.

High pressure compressors will be made at the company's Hillington site in Glasgow, with blades made in Derby, while low pressure turbines will come from Bristol and Derby. Many other Rolls plants, and other UK manufacturers such as Vickers, also have work on the engine.

FR Aviation, the aircraft maintenance and refurbishment arm of Cobham, will strip down the old Nimrod airframes at its Bourne-month site. It will then add a new centre section and wings to be made by BAE, and re-manufacturing the aircraft to produce a basic version which FR will flight test. The total contract is worth something like £50m to the company, and gives a good backbone order to sustain the workforce.

Normalair Garrett, the aircraft systems company controlled by GKN Westland, has also won a useful contract worth over £50m in its speciality of in-flight air conditioning. The Nimrod order to supply the on-board oxygen, cabin pressure controls and dispensers for the aircraft's sonobuoys, secures the aerospace side of Norma-

lair's business at Yeovil into the next century.

Smiths Industries, the aerospace and medical group, will develop and produce digital engine control equipment and a flight management system evolved from its work on the Boeing 737. It will also work on controls and displays for managing the new Nimrod's weapons stores.

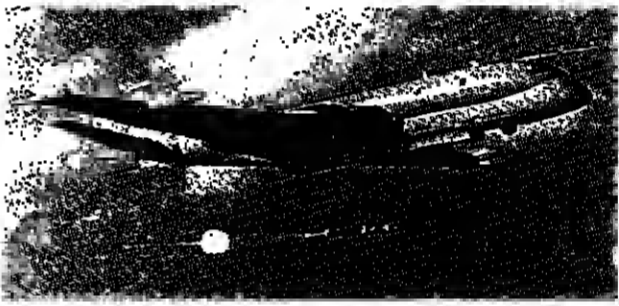
Smiths is also encouraging the MoD and prime contractors to push towards a central single computer for many aircraft systems. This cuts down on the need for separate power supplies and reduces the cost of integrating a raft of computers, saving time and weight. Ultra Electronics, the management buy-out from Dowty which expects to float on the stock market this autumn, must be particularly pleased with the timing of its £50m package of work. In a £50m contract it will produce the acoustic processors for the aircraft at its site in west London.

Racal has fought a successful rear-guard action to have its Searchwater 2000 radar fitted to the aircraft, beating off a strong Israeli challenge. The contract worth around £50m, will consolidate its position in the maritime radar market.

Thomson Training Systems in Crawley has also won a contract which helps it branch out. While flight deck simulators are the company's meat and drink, Thomson will also provide mission system trainers in a deal worth £60m.

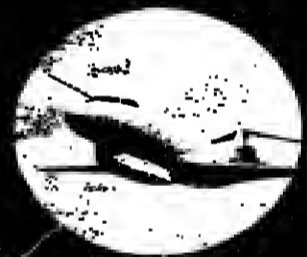
Shorts in Belfast has secured for itself a package of work worth around £50m, though as with GEC, the details remain to be worked out. Messler-Dowty will provide a new undercarriage, to a £40m deal.

The geographical spread of work on such an aircraft is enormous, and these companies are only the first tier suppliers. A network of component makers spread throughout the UK in turn supply them. The government's decision to make the new Nimrod as British as possible was intended to bring electoral advantages.



Sub killer: BAE's Nimrod 2000 refurbishment proposal triumphed

We can answer any questions concerning the ASTOR surveillance system. Like what precisely is going on under that tree down there.



Whether you need high-resolution imagery or battlefield intelligence, there's no better system than ASTOR. And no one can build like UK-based Raytheon E-Systems Ltd. (with headquarters in Harlow, Essex), continuing the 109-year tradition of Raytheon's presence in the UK. See for yourself at Hall 4 Booth J7a, at the Farnborough Air Show, or call Raytheon E-Systems Ltd. at 01474 407257.

E-Systems

14 AEROSPACE

Helicopters: by Bernard Gray

Manufacturers dodge the chop

The industry has avoided the rationalisation sweeping the fixed-wing sector

The cottage industry that is helicopter manufacturing... The industry has avoided the rationalisation sweeping the fixed-wing sector

grammes is likely to be decided at the Franco-German summit scheduled to be held in the late autumn.

Perhaps surprisingly, the NH90/MH90 currently looks like the programme most likely to survive the cut. Germany seems more committed to the transport and naval helicopter, even though the technologies it incorporates are not as interesting as those of the Tiger, and despite the fact that both its main roles could be achieved with cheaper alternatives.

The Super Puma could be used in most utility transport roles which the MH90 is being designed for at a fraction of the cost, while the Lynx would serve for MH90 oval applications. Indeed, Germany is likely to confirm an order for six more Lynx for anti-submarine warfare because development of the naval NH90 has been delayed. Lynx is likely to be in service with the German navy until at least 2015, raising the question of whether a new design of airframe is needed to carry submarine warfare electronics.

The Tiger, by contrast, incorporates radar-avoiding "stealth" and electro-optics technologies which represent a step change from previous European attack helicopters. It will also be the main platform for the long range Trigat infra-red anti-tank missile, which has already cost Britain, France and Germany a fortune.

However, the Tiger is not without its drawbacks. France and Germany want different variants, while the decision by Britain and the Netherlands to buy the McDonnell Douglas Apache has badly dented the Tiger's credentials. The fall of the Berlin Wall has also undermined the basic rationale for the attack helicopter as part of a high intensity tank battle in Europe and made it politically harder to justify in Germany. Even the passive infra-red detection technology of the Tiger-Trigat combination seems to be losing out to the high-resolution radar of the Apache.



The Royal Navy has ordered 44 Merlin anti-submarine helicopters

Both programmes are therefore at some risk, but Europe's other team, Westland and Agusta, are not in much better shape. The EH101 programme is underpinned by the programme for 44 Merlin anti-submarine warfare variants for the Royal Navy, while the utility version has finally been launched with an order for 22 troop carriers for the Royal Air Force. Italy has chipped in a modest order for 16 of the aircraft.

Still, while the Merlin will undoubtedly be a state-of-the-art submarine killer, it is questionable how many other navies will want to fight in the same way. The transport utility version also has the capacity to carry a logical military unit, the platoon, but has yet to justify itself on price, or prove itself in service. Probably the most promising application will be as a search and rescue aircraft with a long endurance.

Elsewhere, Westland has continuing business for the Lynx, where notable prospects include Australia, New Zealand and Malaysia, and will build the UK Apache under licence, but the company still lacks critical mass. Agusta remains bogged down in the morass of Italian government finances.

As a result, it is hard to see how Europe's three helicopter makers can come together, even though the need is pressing. Perhaps the least painful way forward would be some kind of joint venture in marketing and support, akin to the AIR alliance between British Aerospace and ATR in regional aircraft.

If Eurocopter, Westland and Agusta joined in marketing, it would cut down on

Future Large Aircraft: by Bernard Gray

Herculean prevarication

French and German dithering is putting the FLA project in jeopardy

Wanted: \$50m to develop new military transport aircraft, all ideas considered. Designers are proposing... a plate charity fundraisers to bring in the cash. Please give as generously as you can.

At the current rate of progress on the Future Large Aircraft, it will not be long before notices like that start appearing in the small ads sections of newspapers. The sad fact is that the FLA needs \$50m of development funding if it is to get off the ground but, one by one, the main countries supposed to be supporting the project are finding that they have not got the money to pay for it.

The FLA's woes are a little ironic, given the changing nature of military requirements. Increasingly, Nato members are moving away from cold war notions of massed armour and tensions on the central European plain, and starting to stress the need for mobility, rapid deployment, and flexibility.

All of that requires the ability to move personnel and equipment quickly by air, and the FLA should be a natural choice for the job. Yet somehow the project lacks the political cachet to turn the paper design into reality.

As a result, the FLA stands a less than even chance of being funded in the next five years. If funding fails to materialise, powers that want a military airlift capacity will have two choices: either buy it from the US, or buy it from the UK. And since that is exactly what Nato nations did throughout the Cold War, the chances are that it is what they will continue to do.

Formally, the FLA's fate hinges on the Franco-German summit due to be held in the late autumn, when the two governments will try to resolve their differences over funding a number of collaborative military projects. In practice, it is difficult to see how France and Germany can fund serious development work on the aircraft in the next few years, given the pressure on defence budgets in both countries.

Despite the need in both

France and Germany for additional military transport aircraft, that makes an indefinite delay on any significant spending on the project highly likely, calling the viability of the whole idea into question. In political circles, there is a great deal of ambivalence, with neither France nor Germany wanting to be seen as the country that killed the programme.

Senior air force figures, however, are privately commenting that the programme may fall into limbo, making it as good as dead. Airbus executives in Toulouse are not pinning their hopes on getting large amounts of FLA work in the next few years, either.

Even if the governments only propose to delay the

manoeuvres themselves. Airbus has devised an \$80m, 11-month study that the consortium is confident will validate the details and costs of the design. If the study goes as expected, it should allow Airbus to offer governments a programme that would cost \$5bn to develop, and produce aircraft with 50 per cent more cargo space than the C-130J for \$75m each.

Enthusiasts for the programme say that the higher air speed of the FLA increases its lift advantage over the Hercules, and that it would make through-life costs comparable with C-130 ownership. With the ability to lift outside loads such as armoured personnel carriers

nominal pair are due to enter the US Air Force inventory. With the market for replacement Hercules growing strongly over the next decade as old air frames start to tire, Lockheed seems well placed.

McDonnell Douglas could also benefit if the FLA programme ends up in the deep freeze. Now that the US has confirmed the seven-year procurement of another 80 of the jet C-17 "Globemaster III" aircraft, the future of the long-range strategic aircraft looks secure.

If improvements in production processes and the duction processes and the firm Pentagon order mean that the cost of the aircraft starts to fall, McDonnell can start to think realistically about exporting the aircraft



Stare of glory: a Royal Australian Air Force C130 Hercules tests its infrared counter measures

FLA for around five years, it will suffer a potentially mortal blow, not least because the UK has to decide how to replace the second batch of its ageing Lockheed Martin "Hercules" C-130s by then. The loss of the potential UK order for 30-40 FLA, and the corresponding boost to the market for the updated C-130J, would knock the economics of producing the FLA badly.

Faced with government foot-dragging, Airbus Military Aircraft, the Airbus arm that will manage the FLA if the programme goes ahead, and its shareholders, may have little alternative but to fund a pre-development study to flesh out the aircraft's costs and perfor-

and helicopters, the FLA is, they say, a cost-effective and attractive proposition.

Provided governments were to commit to firm orders for the programme promptly at the end of the study - effectively by December 1997 - Airbus could move to a single stage of development and production in time to meet the RAF's needs in 2004.

The delays over the FLA can only be music to the ears of Lockheed, which can see its near-monopoly in the field of tactical airlift being maintained. As well as the RAF launch order for the private venture development of the C-130J, a dozen craft are destined for the Royal Australian Air Force and a

for the first time; an event barely imaginable when C-17s cost almost \$300m each to produce.

With export prices closer to \$200m, air force commanders in Europe and Japan can start to dream of running C-17s with some hope that their wishes may become reality. European air force commanders are already doing just that, and are quietly considering how best to handle the idea.

A proposal for a joint European Nato buy of the aircraft, similar to the acquisition of the E-3 "Sentinel" airborne early warning aircraft in the 1980s, would ease the political difficulties of France and Germany over buying US equipment.

PROFILE Mike Turner, president of the SBAC

Strength after trial by fire

Being president of the Society of British Aerospace Companies in the run up to the Farnborough Air Show must be a bit of a headache. Combining it with a day job as a director of one of the leading companies involved in the glacially-slow restructuring of the European aerospace industry ought to be enough to turn it into a migraine.

Yet Mr Mike Turner, whose lot it is to have both jobs, seems pretty chipper. Perhaps that is because British Aerospace, where he is one of four executive directors, has done pretty well from the recent batch of Ministry of Defence orders, winning both the replacement maritime patrol aircraft and cruise missile competition. It may also be because, while the rest of Europe struggles with high costs, low profits and a severe squeeze on government defence spending, BAe has already experienced much of the pain that other companies are now suffering.

According to Mr Turner, the trial by fire that BAe has been through and the rebound in profits that has seen its share price jump from £1 to over £9 has left the company well placed to play a pivotal part in helping to rationalise the European industry.

"The pressures which have forced us to become competitive in civil and military aerospace are not going to go away. We have to adjust to a market where we are striving to be more competitive. This is starting to dawn on our French and German counterparts, and we have already accepted it."

trade reductions with the US and means that countries cannot retain national champions in all spheres.

"The splintering of European research and technology effort is a criminal waste of money, for example. The US already spends four times as much as Europe on aerospace research and technology, yet a great deal of the European effort is duplicated."

Still, while Mr Turner acknowledges the difficulties and accepts that the rapidly rationalising US industry is snapping at Europe's heels in many markets, he believes there is still time.

"It will take five years to rationalise the European industry. It's frustrating that it will take that long, but this is Europe, and it is just a fact of life. But we do have that time."

He also says he is impatient to get on with the job because Europe has a good sales pitch. "Just looking at our own company, we have some great products to offer. The Jermas air defence system, the Advanced Short Range Air-to-Air Missile, and Eurofighter, for example. I think it is vital for us to press on so we can get products like Eurofighter into the market."

If Mr Turner is right that change is coming, what will the industry look like in five years' time? "There has to be a European aerospace company where the management has operational control of the assets it needs."

"We will need to go beyond the current joint venture structures, which are simply not good enough. A single company which we could create would probably have several divisions such as military aircraft, civil aircraft, missiles, systems

integration and others."

Although he talks of a single company Mr Turner says he is personally not completely convinced of the need to have military and civil aircraft under the same roof. "On balance it may be a good thing to have the two under one ownership, because there are some research spin-offs, such as transferring composite materials from military to civil aircraft wings, for example. But it is not clear cut."

In any event, the distinction may prove

largely academic, since if the military and civil aircraft companies own most of the assets they need and have a single management structure running the business, the national parent companies will become more like ordinary shareholders.

"That is the debate we are having over Airbus at the moment. On the one hand, there may be a benefit in keeping some manufacturing assets within national companies and outside Airbus's direct control, so that Airbus can offer work up to competition rather than do everything in house. On the other, Airbus will need to be able to run its business, and that means controlling some assets."

Mr Turner acknowledges that until recently the push for European

rationalisation lacked momentum, partly because industry and governments have both waited for the other to take the initiative.

"That situation has moved on, I'm happy to say. It is for industry to lead the process, but I'm convinced that we will now get the backing of the UK government when we need that it is important for Europe to come together, and that is a big change."

On the continent, Mr Turner hopes that commercial pressures will encourage companies and governments to avoid trying to be too possessive about control of particular aspects of their industry, which could risk damaging integration. "It is a risk, but people must be pragmatic about what is practicable in this situation," he says.

While the European campaign continues to bubble, Mr Turner insists that BAe and the SBAC have not been idle at home. BAe will spend around \$50m next year setting up a global marketing organisation, which will split the world into geographical territories and have permanent staff based in each region to get marketers closer to their customers. The SBAC is also negotiating with the British government to invest £200m in UK aerospace research by the millennium, with funding to be split equally between industry and government.

"This is an effort to translate the work of technology foresight teams into action. It is part of a process where the government has acknowledged that the British aerospace industry is now competitive on a global scale."

Bernard Gray

Think Profitable advertisement with large stylized text.

AIR advertisement for Air Marketing Inc. with contact information and logo.

Advertisement for 's off' featuring a sun-like graphic and text.

■ Eurofighters by Bernard Gray

# Project pulls out of spin

There is still concern that the management is failing to act with sufficient urgency



Out of sight: Eurofighter should excel in combat beyond visual range

Nineteen-ninety six will almost certainly go down in history as the year when the four-nation Eurofighter programme finally moved over top dead centre and started to hurtle toward production. Many of the remaining barriers to the project's success have been resolved this year and with luck the rest should be sorted out by the year end. It seems a long way from the dark days of 1992 when the Eurofighter was close to extinction.

There is much good news to report on the programme. Since a joint venture between British Aerospace, GEC-Marconi and Daimler-Benz Aerospace was set up to sort out the difficulties with flight control systems, many of the problems have been resolved.

A new software package is being fitted to the prototype aircraft that will allow the pilot much more freedom of manoeuvre at subsonic speeds. Beyond that, work is in hand on software improvements that will afford similar agility beyond the sound barrier, and the project's engineers are confident that they understand what needs to be done.

Progress has also been made on the integration of the radar and radome - one of the other main technical bugs of the programme. Again, engineers seem on to have the measure of the task. Indeed, pilots have been very impressed with the Blue Vixen radar that GEC-Marconi has made for the Royal Navy's F/A 2 Sea Harriers. The Blue Vixen shares many technologies with the Eurofighter radar.

Flight tests have also pleased the designers: the aircraft is performing very closely to the predictions of computer models, allowing the engineers to hope that the formal flight proving could be cut. Officials in the UK Ministry of Defence are also impressed with the per-

formance of the aircraft. Complementary technical progress is the fact that the long-standing dispute between Britain and Germany over the allocation of work for the production phase of the programme has finally been resolved. Germany increased the number of aircraft it agreed to buy from 140 to 180, while Britain trimmed its off-take fractionally, allowing Germany to take the 30 per cent share of work it felt it needed, and raising the UK's share of the programme to 33 per cent.

The final fillip the programme needs in 1996 is agreement between the governments that the contractors can move ahead with investment in the tooling and manufacturing plant needed for production. Giving approval for this £4.5bn production investment phase will effectively guarantee that the aircraft goes into production.

One encouraging sign that the approval may be reached in time is the desisting silence from defence ministries about the prices industry is quoting for production of the aircraft. Far from screaming in the streets about the outrageous bills, there has been quiet satisfaction that the quotes have come in lower than the previously indicated prices.

Indeed, such was the confidence in the UK, the MoD considered announcing that it would be proceeding with Eurofighter production investment, subject to contract and agreement with its partners, before parliament rose for the summer. Discretion proved the better part of valour, however, and the MoD has decided to wait

until its partners are ready and the aircraft has passed some more performance milestones.

Getting that agreement from partners could be more difficult than it looked in the spring, however. Germany in particular is under extreme budget pressures as it strives to squeeze into a financial corset to meet the conditions for EU economic and monetary union in 1999.

Germany's defence budget has been cut twice in the past two years. While there is no longer a real threat to the survival of Eurofighter in Germany, there could be attempts to delay production investment funding.

The bind is made tighter by the fact that funding for the programme will have to get through Bundestag parliamentary committees that have been hostile to the programme in the past. Those same committees are also still smarting from the decision of defence minister, Mr Volker Rühe, to increase the number of aircraft Germany will buy.

Autumn will thus be a tense time for the Eurofighter, and while the inside betting is that it will clear the Bundestag hurdle, the margin is currently too close for comfort.

Any delay would be a severe problem for the programme, which has already slipped far behind schedule, and for companies such as BAe and Dasa, which badly need the production work to fill their factories. Indeed, if anything, there is a strong case for accelerating the rollout of the aircraft now that technical problems have in large part been solved. As well as the industrial

arguments for filling factories, there is a good operational case. If Eurofighter is as good as its designers claim, then the sooner it is in operational service with the partner air forces, the sooner it can be directly compared with other aircraft and the more likely it will be to win export business.

It will also be important to have the Eurofighter firmly established in the market before the Joint Strike Fighter starts to appear on the horizon. Eurofighter may be a more capable aircraft than the JSF, but the newer design has advantages: Stealth is sexy and will attract air forces, while the single engine, low price concept will also implore finance ministers. The idea of being part of the next-generation F-18 programme, buying an aircraft that is likely to see almost 3,000 in US service alone, will also have appeal.

Eurofighter's best chance to counter that threat is to give potential customers affordable performance at least a decade before the JSF enters service. Unfortunately, neither the partner governments, nor the companies involved, seem to be pressing hard for this.

The main criticism that can still be levelled against the project is that it lacks sufficient central managerial drive. Problems are being resolved, but in everybody's own good time, with little sense of urgency - or frustration at the fact that the first deliveries to the RAF are unlikely until 2002, with full operational squadrons not on station until 2005. Nor is there sufficient irritation that this further slippage of almost two years has occurred in barely three years of work.

If the Eurofighter is to have a future beyond the countries that have conceived it, greater central focus and a better eye for the market are needed.

Rather than slapping one another on the back about the number of problems they have solved, the partners need to get to work on reclaiming the time that has been lost.

PROFILE Sir Robert Walmsley, British chief of defence procurement

# Pragmatism in procurement

As the new British chief of defence procurement, Sir Robert Walmsley, 55, has some tough acts to follow. Sir Peter Levene's hard-headed reform of defence acquisition has slipped into folklore: it was a process which has strengthened the parts of the UK defence industry which survived it, but left plenty of dead bodies and broken bones in its wake.

Sir Malcolm McIntosh's open and relaxed style masked an equally determined attitude to squeezing value for money from contractors.

Sir Robert has taken over at a critical time for the defence industry. The need for further rationalisation is clear, but the path the industry should follow to achieve it is not. And there is the further knotty question: what do you do with the Levene Doctrine of competitive tenders when there is only one competitor left?

Sir Robert is at least well placed to recognise the options available to the Ministry of Defence and to industry. In his previous job as controller of the navy he was in charge of the Royal Navy's equipment programme.

In that post he saw every variant of the approach the MoD could take towards buying its weapons. He oversaw the latter stages of the Trident programme, a non-competitive contract awarded to a single contender; the negotiations of a second batch of Trafalgar submarines, which saw two consortia vying for prime contractor status; the cut-throat competition between shipyard yards for Type-23 frigate orders; the bruising "no acceptable price, no contract" negotiations over the order for two marine assault ships with the only yard capable of building them; and the Common New Generation Frigate collaborative programme with France and Italy.

conversation it appears Sir Robert intends to bring aspects of all of these methods to defence procurement. The fluid situation demands a flexible attitude.

"We believe in competition, it has served us well, but where it is appropriate we will look at how we can develop partnerships with industry, and we will look at joint international efforts," says Sir Robert. "Britain has one of the most open defence procurement systems in the world, and I would like to see it stay that way."

When he talks of partnerships, Walmsley stresses he does not have in mind the kind of cosy

relationship which pre-dated the Levene revolution. "It may be in some areas we are left with only one realistic potential prime contractor on a programme, and we will have to work closely with that company. But that does not mean that we have to abandon competition. Prime contractors typically only account for 20 per cent of the work on a project, and there is often scope for competition in supply of sub-systems. We will pursue that."

At the prime level, Sir Robert believes there are lessons which can be learned from the North Sea oil industry. There, participation in the risks and rewards of prime contracting are often shared with lower-tier companies to bind the team

together. It is an approach which is already at work on the Trafalgar submarine programme. After a run-off between a consortium led by GEC-Marconi and a team headed by VSEL, the Barrow-based shipyard, Walmsley decided last December to negotiate with Marconi as sole designated prime contractor. Other companies will have to compete to get into the programme.

Despite the continuing emphasis on competition, there are areas where Sir Robert thinks industry and the MoD can work more closely together. "I think we could have a common risk register on

France, Mr Jean-Yves Helmer, is from the car maker Peugeot.

Walmsley identifies solving systems integration problems as one of the key challenges facing industry and the MoD. He says that the ministry can help by making sure it does not split work between contractors in such a way as to create problems. "We have to make sure we do not own the critical interfaces," he says.

The other main tool he suggests is the increased use of computer simulation to model every aspect of a system's performance, which can accelerate development and predict problems at a stage where they are easy and cheap to resolve.

While Sir Robert has clear ideas on the way he wants procurement to run, he remains coy on how industry might consolidate. He is particularly keen to stay on the fence on the subject of transatlantic or European collaboration. "Some of our programmes are clearly so large that we have no choice but to work internationally. But we won't become polarised towards Europe or the US."

Still, he does believe that industry needs to rationalise across international borders, and that governments will have to show greater flexibility about which capabilities they retain if that is to work. "Governments can make a contribution if they allow work to move to the most sensible place."

Britain, he thinks, behaves well in international programmes, and he clearly considers that the UK has moved to satisfy continental concerns about its procurement policy. "Given procurement announcements we made recently, I think one can argue that we are not doing our bit to help Europe work together."

Costs can also be cut by streamlining development and manufacturing. "We have to get our time to market down," he says. Techniques borrowed from the automotive industry may be helpful here and Sir Robert is pleased that his own opposite number in



Walmsley: thinks there is much to learn from other industries

Bernard Gray

While we wake, he's protecting our freedom.

While we work, he's keeping the peace.

While we sleep, he's guarding our dreams.

Who will be there with him?

McDonnell Douglas Will.

MCDONNELL DOUGLAS



McDonnell Douglas Tiger aircraft: The F-15, F/A-18 and the AV-8B.

Defence consolidation: by Bernard Gray

# Europe lags US in alliance-making

The industry's forces must unite if they are to be internationally competitive

Rumour and gossip are swirling around the European defence industry like chaff in the wind when the annual round of driver moves is at its height. Everyone, it seems, is talking to everyone else about deals, alliances, mergers and trades. Yet while the political manoeuvring is intense, few companies have signed firm deals.

The inertia contrasts with the situation in the US, where the deal that has seen Boeing buy Rockwell's defence business for \$3bn is the latest example of quick consolidation.

Many of the reasons for the glacial pace of change in Europe are well rehearsed: worries about national security reinforce each other; European countries' desire to maintain their own defence industrial base. When combined with incompatible procurement philosophies, mismatched timetables and differing military requirements, the result is a splintered industry in a log jam.

The pile-up was made worse recently by the French defence cuts, which seemed to fall disproportionately on international collaborative programmes such as the Future Large Aircraft, and the Tiger attack helicopter.

All of these were being developed jointly with Germany, which could now retaliate by chopping the Helios spy satellite programme. Without joint programmes it will be difficult for the fragments of the European industry to cohere and much depends on the outcome of the Franco-German summit in December.

Despite such setbacks, new factors are beginning to emerge that give a glimmer of hope that the industry may yet be put on a sounder economic footing. Many of the reasons for slow progress being cited now suggest that the complex web of relationships is to blame. Until industry executives can calculate how any possible move will affect other alternatives, they are reluctant to commit themselves.

The result is a huge exercise in combinations and permutations to determine the best way forward for each of the forces in the industry, combined with hard-headed conversations about which of the options is politically realistic. While that process is frustratingly slow, it does at least show that the industry is finally taking the need for consolidation seriously. It also offers the possibility that once the main options and their ramifications have been assessed, events across a wide range of fields could move very quickly indeed.

Much of the interest currently focuses on France, where the government is finally moving towards rationalising and privatising its defence industry. The privatisation of Thomson, the electronics company, will have the most immediate impact outside France. Currently, the French government is negotiating with two French-led consortia over who should buy the company when it is sold. But whichever is the winner, outside companies are likely to become involved.

Lagardère group, owners of the Matra defence company, wants to buy Thomson-CSF, the defence electronics arm of Thomson, in alliance with other European defence companies. Lagardère's plan is to allow other companies to buy minority stakes in specific parts of Thomson-CSF's business, while it will have a two-thirds shareholding in the overall operation.

It has also said that it would sell Thomson Multimedia, the company's television manufacturing subsidiary, to Daewoo of Korea.

This model builds on the approach it has taken with its own defence business. It has formed a joint venture with British Aerospace in missiles, and another with GEC-Marconi in satellites. Under Lagardère's plan parts of Thomson's operation in specific business areas would be partnered with foreign companies, such as BAE, Daimler-Benz Aerospace and GEC-Marconi. Thomson's missile activities, for example, would be included in Matra-BAS Dynamics, the two concern's

missiles joint venture. While this plan is clearly in Lagardère's interests, since it would give the company control of most of the French defence electronics industry for a relatively low cost, it is not clear that it will give the European defence electronics industry the critical mass it needs to compete against US giants such as Lockheed Martin.

The plans of the other main bidder, the French telecoms company, Alcatel, are less clear. Alcatel originally said that if it succeeded in acquiring Thomson it would keep the television business, initially an attractive idea to the French government. It would also look much like GEC, with telecoms, power engineering, defence and consumer electronics businesses under one roof.

However, Alcatel probably lacks the finances to keep all

of its existing businesses and buy Thomson. There is strong speculation that the company could reduce its 90 per cent holding in the GEC Alsthom power engineering operation, and that its 44 per cent shareholding in Framatome, the French nuclear power construction company, could also go.

Alcatel could also bring in other partners such as GEC to support its bid. A joint venture that pooled GEC's Marconi division with Thomson-CSF would have strong industrial clout and would be a European defence electronics company with sufficient mass to take on global competition. But when GEC tried to arrange a similar deal with Thomson directly earlier this year, the French government respooned by replacing Mr Alain Gomez as head of Thomson.

Whichever group wins,

Thomson will be strongly placed in the defence electronics and systems integration business.

Clearly with the four-nation Eurofighter, the French Rafale and the Swedish Gripen all being wound up for production, consolidation is badly needed. With the talks between Dassault and Aérospatiale designed to produce a merged French equivalent to BAE or Dasa, and with the alliance between Saab and BAE bringing the Swedes into the British camp, the three main players in the military and civil airliner business are moving into position.

The easiest deal to complete would be a tie-up between BAE and Dasa, partly because both are already in private hands and partly because the two work together on Eurofighter, as well as in Airbus. However,



Endangered Tiger? The weight of recent French defence cuts seemed to fall disproportionately heavily on international collaborations

Progress on converting Airbus into a fully private company may help here, but the mismatch between Eurofighter and Rafale programmes remains a serious drawback.

This understandable but potentially fatal slouch is seeing the European industry fall further behind the US. Straws in the wind show how US competition in export markets is accelerating.

Hungary, which had been expected to negotiate a co-production agreement on the Saab Gripen, has delayed taking a decision for six months after hard lobbying by Lockheed Martin on F-16s. If Europe is not to be marginalised in such markets, it must work to become competitive at a much faster pace than the leisurely stroll some executives currently have in mind.

As well as commercial readiness, it will take political will to make that happen. Governments will need to construct a procurement framework that gives industry the best chance to make long-term partnership decisions. The nascent Franco-German arms agency is a vehicle waiting for just such a task.

There will also have to be greater preparedness to give and take between governments; excessive greed or ambition for control of the industry will lead to the do-or-die fighting that would ensure that there is no industry left worth arguing about.

Britain has made a move in this direction recently with its purchase of the Storm Shadow cruise missile, which cemented the missile joint venture between BAE and Matra. It remains to be seen whether other countries are moving to compromise too.

The Joint Strike Fighter: by Bernard Gray

# Battle will decide war

The consortium that wins the order will dominate the industry

An order for 3,000 fighters is enough to make even the most indolent aircraft salesman get out of bed and go to work in the morning, and with the US Joint Strike Fighter programme worth well over \$100bn to the aerospace industry over the next 20 years, it is not just the sale staff who are jumping.

Top executives know that more than the F-22 or the Eurofighter programmes it will be the Joint Strike Fighter which determines which companies dominate the fighter aircraft industry in the next century. Three consortia are fighting to win that business, yet while the aircraft will not be in service for over a decade, by the end of this year one of those teams will already have lost.

It is the sheer scale of the programme which makes it so decisive. The US Air Force wants around 1,900 single-engine, single-seat tactical fighters to replace its F-16 fleet from around 2010; the US Marine Corps is looking for 600 short take off and vertical landing (Stovl) strike fighters to replace its AV-8B Harriers; the US Navy will require 300 stealthy carrier-based aircraft for deep strike missions in the early stages of war; and the Royal Navy needs around 100 Stovl fighters to replace its Sea Harriers.

Each of these requirements is scheduled to be met with one basic aircraft, with the variations for each mission kept to an absolute minimum: the Pentagon wants around 90 per cent of the aircraft to be common for each variant. All told, that adds up to almost 3,000 aircraft from one production line for the launch customers alone, and with low cost one of the main priorities, the JSF has excellent export prospects.

The Pentagon has said it wants the basic JSF to have a fly-away production cost of less than \$30m at current prices, and that even the more complex Stovl variant should cost less than \$35m. There are plenty of countries operating Lockheed F-16 and McDonnell Douglas F-18 aircraft around the world which will eventually have to replace them, and which would love to get their hands on a steadily attack aircraft at that kind of price. Provided the Pentagon is prepared to sell them this technology, the JSF offers just that.

The Pentagon has set down a few ground rules for teams bidding. A high

degree of common design between the conventional fighter, carrier-based jet and Stovl versions; a keen price; use of stealth technologies, including shaping the aircraft to avoid radar, special radar-absorbing materials, and storing bombs or missiles inside the aircraft to cut radar reflections; and use of the same Pratt & Whitney F119 engine which powers the F-22 fighter.

From the three teams currently pitching, the Pentagon will select two to go forward and flesh out their designs by the end of the year, with a final winner to be selected around 2000.

While the prospect is mouth-watering for US air frame makers, there is also a clear realisation of just how high the stakes are. To the winner goes a place in the sun as one of only two or three companies in the world still in the fighter aircraft business 25 years from now. The losers will, in all



Finesse wonder: an impression of the McDonnell team's fighter

probability, be cast into outer darkness.

As a result, all of the teams in the competition are taking the bidding very seriously indeed. Lockheed Martin, the colossus of the US defence business which owns the Fort Worth F-16 fighter plant and which is lead contractor on the F-22, is inevitably in the bidding. It is offering an aircraft which is essentially an evolution of its design for the F-22, although it uses only one of the P&W engines, rather than the two which power the F-22.

Lockheed's ability to lean on its development experience with the F-22, and its knowledge of working with the P&W engine means that it can argue that its solution offers lower technical risks than its competitors. It can also offer some overlap in use of parts with the F-22, potentially cutting the cost of new aircraft to the Department of Defence, and possibly reducing the level of spares which the armed forces would have to carry.

To power the Stovl version of its jet, the most unconventional part of all three offerings, Lockheed is planning to use power from the main engine to drive a vertically mounted fan which will allow the aircraft to hover.

McDonnell Douglas, which

has teamed up with Northrop Grumman and British Aerospace for the competition, is also leaning on its experience in the F-22 competition for its offering. The aircraft it is proposing clearly owes a debt to the F-22, the McDonnell design which lost out to the F-22.

To cut down on the aircraft's radar reflections, McDonnell has all but eliminated the tail of the proposed fighter. Instead, it is relying heavily on using nozzles to direct the jet exhaust of the aircraft and keep the fighter stable in flight. While all of the contenders intend to use such thrust vectoring, McDonnell's design is most heavily dependent on the idea. If it works, it could be a significant advantage.

McDonnell's Stovl design is more radical than the others. It proposes using a separate vertically mounted engine, set directly behind the pilot, to generate lift for short take off and landing.

Boeing has muscled in on what was supposed to be a cosy two-horse race between Lockheed and McDonnell. However, some of its ideas impressed the Pentagon, and its design has been included in the race. It has used the technology which powers the Harrier jump jet to get lift for its Stovl version. This directs the exhaust from the main engine downwards to lift the aircraft. While this cuts weight and saves space for fuel or weapons, the hot gases can damage landing surfaces.

Boeing's proposal has one other, potentially fatal, drawback. Its aircraft, to put it nicely, is not very pretty. In these days of mathematically computed odds of victory in war, such things ought not to matter. But USAF generals are pilots, and romance plays a big role.

Still, because the stakes are so high, whoever is thrown out of the competition at the end of this year might well end up in one of the two remaining consortia, courtesy of a Pentagon arrangement. It is not difficult, for example, to imagine a Lockheed-Boeing team, mirroring their teaming on the F-22, being set against the McDonnell-Northrop-BAE alliance.

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